Gen. Leonard Wood's Notebook at
Harvard Medical School Dec. 1881 - June 1882.

Leonard Wood
Harvard Medical School
13 Allen St
Oct 1881

Materia Med. Dec 15. 1881

Rec In Pr Phosphorated oil the oil is heated to remove any air or water which may be in the oil ~~...~~ 110°

Sulphur and sulphurous acid may be used for parasitical troubles itch and ringworm

Sulphur may be given in such a dose from a teaspoonful to a Table spoonfull

Sulfurous acid dilute may be given in doses from 10 to 30 drops in a tumbler of water. Strong 1-3 dr. to the same amt of H_2O

For healing the tincture is better than the compound tinc

The latter is better than the pure tinc for administration

The tinc is insol in water

The compound tinc is sol. in water since the iodine is sol in a solution of potassic hydrate

Iodine is given internally in the form of a tincture very dilute but even then it is very irritating and is given in doses of 20 [illegible]

It is also given mixed with starch which makes it much less irritating and may be given in larger doses of 60 grs

Bromide of potassium may be administered in [illegible] in which it keeps very well

It is given with [illegible] syrup of [illegible] [illegible] which [illegible] [illegible]

Potassic hydrate. It is a caustic and [illegible] and is given internally in [illegible] dilute [illegible]

(3)

(.4)
(.3)
(.4)
(.2)
(.4)

(2)

(178-278) 80 (66)

(1)
(1)
(1)
(1)
(1)

(1)
.86 - .2 (1)

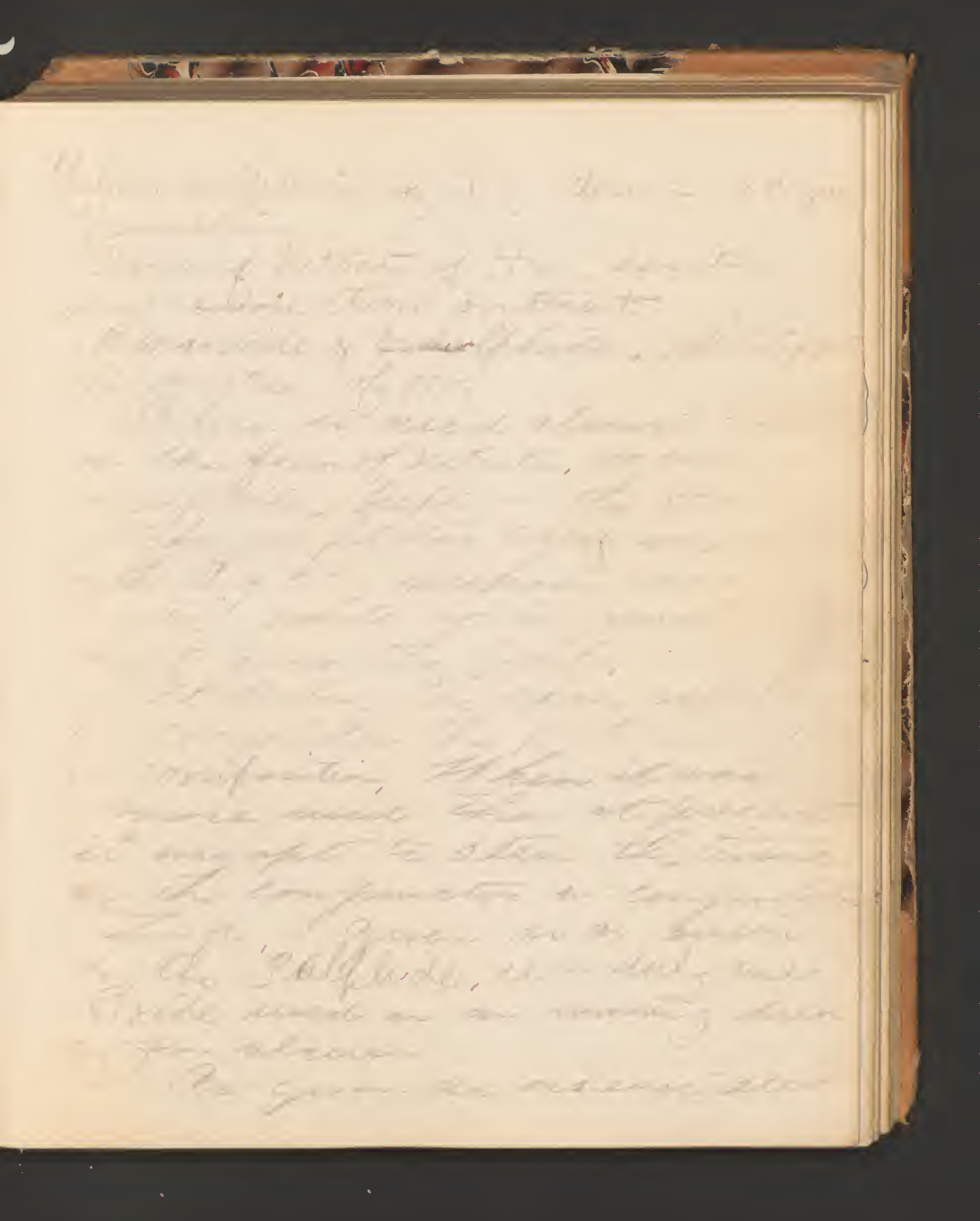
(2)

alcis (75)
(150)
(5)
(1)

H_2O

H_2O

H_2O



Pint of nitrate of Hg
' [illegible] and [illegible] of Hg
' Ag Nitrate
' Zn —
' Zn [illegible] sulphate
' Cu
' Cu [illegible]

Materia Med Jan 5. 1882

Prescrip are usually written in Latin.
In using the Metric system the Roman or Arabic numerals are used.

Prescrip consists of two independant sentences, 1st. that of direc[illegible] or the [illegible], [illegible] to be taken with the [illegible]
2nd that of which [illegible] is the predicate

Avoid all abreviations

Clearness of construction.

Every drug should have a [illegible] and no more.

It is a good idea to give the name of the patient

It should sometime be written under the signa. especially when two or more prescrip are going to the same house

Age of the patient, particularly when children should be set down

Name of the prescriber should be put on the [illegible] prescription

When the dose is of great size something should be used to indicate that it is not a mistake and that fact attracts the attention of the ~~[illegible]~~ doctor. In Germany the ! is used here the word sic is used, but it is best to write out the direction in full.

Materia Medica, Jan 12. 1882.

Rules for doses they should be proportioned to the wt of the patient. This is Clark's way. Another way is to divide the age of the patient by 12 plus the age of the patient

$$\frac{age}{age + 12}$$

In very old persons you have to diminish.

Amt of the prescription you should learn so much the amt of the sub in proportion to its dose and the length of time it is to be taken. Water, Alcohol. fixed oils. glyc. syrup. These are the best 4 [illegible]

All of the decoc and infusions will spoil in a warm room in from 3 days to a week

Tomatoes keep indef. Squashes also keep well - a month or so in warm weather

Walters Lect Jan 26. 1882

Starch this is formed in almost all plants, is the principal early product, & must be used in the first for the plant and its propag.

Used formed in the [illegible] is formed in [illegible] the [illegible] in the process of [illegible] it transform[illegible]

Although the starch in plants [illegible] there is little difference of what nature it is.

Potato are large [illegible] granules and [illegible] [illegible] intermediate forms. Their size is 1/500 of an inch in all well organized grain you have a black spot in each and Rice. starch angular.

Starch is very slightly sol in cold H_2O. In fact it is a question

whether they are offic c st ill
it is partially sol in boiling H_2O
bursting at 200 deg

~~Polymum~~ Amylum or starch
several compounds of starch are
used in med. and pharmacy
Glycerinum amyli. 1 part starch
8 of glyc. used til for eye wash
and used to hold other sol
Iodide of starch, is a mix of
starch and I the I being in small
amt.
Good as an antidote in cases
of I poisoning. Arrow root. this is
quite an important prep used
to be used quite extensively
as a food for chil. comes
from a root grow in trop
countries. Close grain powder
squeaking sen between the fin
Cannai starch another variety
of arrow root
This root is used in tincture
of Ipecacuanha

Gums. 2 var. 1 called arabin
sol in H_2O 2 vasolin
Acacia vera is one of the num
legz. found in trop countries
this exudes as tears and dries
and is plucked in these form
Turkey gum than is the best
Collect cordifam

Gum Arabic is Composed of arabin c̄ calcium &
magnesium — Arabic acid readily obtained from
Gum Arabic — The Gum Arabic is used
in troches and pills — but always mixed with
glycerine and water owing to its hardness. Mucilage
used as a vehicle —
Tragacanth — growth seen in the wilds of Europe
and Asia — A gum.

	Sol.	Page	Dose
Antimony		190	gm

Piluae antimonii compositae or Plummers Pill = Sb. S + Hg_2Cl_2 + Guaiac + molasses 1094 1–2 Pill

Pulvis antimonalis. or James powder. = Oxide of Ant. + Phosphate of lime 1186 ~~.2~~ .2–1.

Antimonii et potassii tartras, or tartar emetic = Sb O. + B. tartrate of K + H_2O, (H_2O), 183 .006–.03

Syrupus scillae compositus. = Tartar emetic + squill + seneka + sugar + dilute alcohol 1401 ~~.12~~ 2.

Mistura glycyrrhizae composita. compound mixture of licorice = Licorice + sugar + acacia + camphorated tinct opium + vinum antimonii + Sp. of nitrous ether + H_2O 925 16.

Bismuth 294

Bismuthi subcarbonas = Bi + HNO_3 + NH_3H_2O + $NaCO_3$ + H_2O (HNO_3) 288 ~~.16~~–4.

Bismuthi tannas = $BiNO_3$ + HNO_3 + NaHO + Tannin (HNO_3)

Hydrargyri Pilulae. = Hg 384 gr + Confec of rose 576 gr Licorice root 192 gr make 384 pills. 1179 .12–.4

Hydrargyrum ~~cum creta~~ cum creta = Hg + Chalk. rub until globules disappear. cease to be visible 742 0.2–.6

Sol Boyle done

Hydrargyri subchloridum rubrum, or Corrosive Sublimate = Hg + Sulfuric Sol in Aqua regia used as a fumigant and disinfectant 7.34

Hg_2Cl_2 = Hg + H_2SO_4 + NaCl ~~7.49~~ Sol —

2 part boiling water cold H_2O 7.19 .04

Hg_2Cl_2 Hydrargyri chloridum mite = Hg + H_2SO_4 + NaCl Sol in the mineral acids, used green in a syrup in volue .72 c, .06–.1

Hydrargyri iodidum rubrum. Hg_2Cl + KI + H_2O. Sol in hot alcohol in a cool powder. 7.28 .004

This latter in collect the Bimuriate (Hg Hydrargyri iodidum rubrum = Hg + I + Stronger alcohol must in water and alcohol 7.35 .05–.06

Hydrargyri sulphas flavus = Hg + H_2SO_4 7.33 1–2

1550

Zinc

Zinci sulphas = Zn + $ZnCO_3$ + Cl + H_2SO_4 + H_2O, Sol in a large excess of H_2O 1547.

As an emetic it requires about 1–2 fl. H_2O in a dose of 6–4.

Required dose for continued treatment .06–.1 in pill form

Cu 4.85

Cupri sulphas, = Sulphide oxidized in the sulphate Sol in H_2O 4.82

As an emetic dose is ,1 – ,6 mixed with fine sugar; Continued treatment = full form ,01 – ,1

Amylum 10 of 8 to 1 of ! 171

Iodidum amyli 10 of 3 to 1 of 9 776

Glyceritum amyli 1 of 8 to 8 of 9 686

Tragacantha, secretion from the tree astragalus gens. formed in bands 1 wide and 4 or 5 inches long. of a white color 1465

Acacia 3

Ipecacuanha, opium. ~~60~~ 4 gm gr each. KSO4 ~~gr~~ gm .32 rub togeather into fine powder, = Comp Ipecac pow 1188. (1.)

Pulvis glycyrrhiza compositus. =
Powdered senna, powdered licorice root. each 60 gm
refined sugar 180 gm, make powder 1188 (3.)

Pulvis Jalapae compositus, = Jalap – powder 30 gm. bitart of potassium 60 gm. 1189 (1.)

Pulvis opii compositus = 1½ oz. of Opium, black pepper 2 oz. Ginger 5 oz. caraway fruit 6 oz. tragacanth ½ oz ~~Mix through~~ 1190 (.2)

Pulvis rhei compositus = Rhubarb 4 oz. Mg 12 oz. ginger 2 oz. 1190 (2.)

Materia Med. Feb 2. 1882

Licorice. Manna. Glycyrrhizin is the sugar which is the important portion of the licorice. Stick licorice is made by boiling the root down to a thick syrup and filtering and ~~[illegible]~~ rolling into stick. The syrup of lic is very useful as a ~~[illegible]~~ vehicle: as is the powder.

Manna comes from the bark of an ash tree grown in ~~[illegible]~~ and southern ~~[illegible]~~ Europe.

Cellulose is used in med in the form of ~~[illegible]~~ gun cotton. This is heavier and darker than normal cotton. It will dissolve in ether and alcohol forming collodion. Used to cover little cuts and so forth. Also used in holding wounds together as it dries it contracts strongly.

Wood exposed to a high temp. it decomposes into various sub. one of the most usefull is tar. [illegible] a [illegible] [illegible] sol. in ether alcohol [illegible] usually given in form of an [illegible] made by macerating 1 of tar in 4 of water [illegible]

Glyc of tar. oint of tar
Infusion is given internally as
many the glyc. but not so much
Oil of Cade. another form used
by dermatologists. supp to be made
from cedar.
This looks like tar and has its
prop. but the odor is more agree-
able. Creasote made by distill of
tar, and sap. Yolk. is of a yellow-
ish. or reddish color. which it gets
upon standing. Sol in 80 parts of
H_2O. Sol in Ether alcohol.
good antiseptic. used like
Carbolic acid. Made as a water
and as an ointment
1/2 gtt is the lowest amt of the o
which can be used
Charcoal. Carbo ligni. or tar
is made in this country in a
very crude way.
It is used as a deodorizer
and is applied to sloughing sores
is given internally in cases

where digest. is poor. the food putrefies in the stomach.
Paraffine is made from wood and coal tar. comp of several sub Insol in H2O slight in alcohol used in a mix in the powder ~~are~~ cerates

Carbolic acid made in the destructive dis. of wood and coal. rarely comes pure, it crystalizes at ordinary temp when pure. crys are separate and distinct and of a white color. Melts temp at 95 deg. absorbs H2O on exp to atmosphere.
~~Sol Mix of 5% of H2O is not a~~ ~~sol~~ Glycerite, 1–4, Suppos Oint. Sol in water. these are the forms which are used

Salicylic acid is made from Carbolic acid, and is much cheaper than the old form which was made from winter green

Cosmoline Vaseline

		Page
Liquorice	=	580.
Collodium		493
Tar		1109
Oint of Tar		1493
Ol. picis of Tar		687
Charcoal		349
Creasote		471
Carbolic acid		31
~~Sulph.~~ Salicylic acid		73

Materia Medica Feb 9. 1882

~~Salycatic~~ Salicylic acid given crude and in cases of rheumatism given - powder and in solution. dose, 25 to 1. gm. taken in powder with a little something to disguise the taste. When given in [illegible] you should give it in an alk water. salicylate of Na. is a little more sol. than the common variety

Carbolic C_6H_6O. Ch[illegible], comes in liquid form. when pure it crystallizes in the form of pure salt deliquescent crystals which melt at 20 deg. when mixed with glycerine & water it is much more convenient

A teaspoonfull to ½ pint is a good proportion. 1—20 is the strongest that can be made. 1—40 or 100 in olive as strong as need in surgical. Ointment 1—16. is right.

Petroleum in the crude state has been used externally and inter but is not of much use

Cosmoline vaseline. Cosmoline is the oil left in the still

after the distill of the more vol sub. Rigoline is a sol which comes off during the first portion of the distillation is used as a means of local anesthesia

Neither benzene. vaseline are the sol which come over after rigoline Next come the paraffines which are waxy solids insol in H2O and sol in Hot alcohol

If the distill is not carried far enough to carry over the paraffine you get a dark sub with a tarry odor. and when this is passed through animal charcoal, and you get the clear cosmoline and vaseline The charcoal is heated just enough to cause the oils to come come through in a liquid state

Cosmolines never crystalize and have this advantage over paraffine

All these sul never become rancid and are thus better than the animal

fate. and they do not decompose the drugs with which they are mixed

Sub-made by fermentation

1st Alcohol = When beer ale they all depend upon the fermentation of sugar in presence of a little albumino us-sul. with the presence of heat

Here are also a certain number of subtle odours sub called ethers which give a certain flavor to the liquors

One medicine is made from malt extracts. not offensive = malt treated treated with H2O to remove all sugar. and then evaporated to a syrupy consistency contain grape sugar dissolved in H.O. and a little ant of diastase not very valuable

Other products made from malt are the beers = Ale 4-5:
Ale. 6-8.. porter and stout 6-8.
Ale porter and ale have 3 added of caramel

Wines are made from such fruits as do not need the addition of yeast. but have a medium in which the sugar fungus takes root

Wet and dry refer to amt of sugar. White and red refer to the color of the fruit

Sparkling wines are those bottled before fermentation stops and so you get a little CO_2

Official wines are Port and Sherry

Port is a red wine with a large amt of tannin and comes from Portugal

It ought to have 20 or 22 %

Dry wine is lighter and does not contain so much tannin

Usual has from 16 - 20 %

Rhine wines are just more pure as are the lighter French and German wines generally. They do not have a good deal of free Et Bi tartrate of K.

Alcohol distilled from wine make brandy

That distilled from grain mak
is ~~brandy~~, Whiskey. Molasses makes
rum
3 grades of alcohol in the Phar
stronger alcohol = 92 % of alcohol
ordinary alcohol = 82 %.
Proof Spirit = 50% of alcohol
Alcohol is used in the fluid extra
cts tinctures, resins and others
~~From~~ this comes ether, by distilling
alcohol with H_2SO_4, that which comes
over between given temperatures. it
is a clear volatile inflam sol
sol in H_2O in propor of 1–14. or
if a little alcohol is added it
is more sol
Mixes with alcohol sol to any
extent fats. volatile oils are ad
ded in it as are the greater part
of the alkaloids
~~Ether, alcohol +~~ ethereal oil
Used for comfort and local
anesthesia but for the local is
not good. Internally dose is
a tea to a table spoonful

best way is to enclose in a capsule. By the rectum this is good for colic. should be mixed with starch or some such [illegible].
Prep are the compound spirit of Ether. and spirit of nitrous ether

3

Subjects for ~~examination~~ recitation

Maranta.			899	
Acacia	Leg.		3	
Tragacantha	Leg		1465	
Glycyrrhiza	Leg.		688	
Manna	Oleaceae		897	
Saccharum lactis	(Sol in H_2O)		1246	
Collodium	(~~Sol in Ether & Alcohol~~)		443	.05-.1
Creasotum	(Sol in H_2O, Ether, alcohol)		471	.15-.1
Acidum carbolicum	" " " "		31	
Cosmoline	(Sol in vol and fixed oils)		1056	
Paraffinum	" " " " "		1057	
Whiskey		122,	1343	
Wine			1521	
Rum			123	
Brandy		123,	1350	
Beer		7,	68	
Alcohol			121	

Amyl nitras (Sol in rect spirit)		168	.1 – .3
Ether		105	
Spiritus aetherus Compositus		1338	.2 – .4
" Nitrici aetherus		1339	1 – 2
Iodoformum	Sol in (C_2H_4O)	780	.06 – .2
Chloroformum		401	1 – 4 Subcut
Chloralum hydratum		393	.6 – 2.

Also read up the prof'd gums and starches

LLLL 4

Materia Medica

Feb 16. 1882. Recitation

Beat tragacantha is called Gum Tragacanth

Subject for recitation Mar 9. 1882

Oleum aethereum		977	
Spiritus aetherus compositus.	( )	1338	2 – 4 (3)
" " Nitrici		1339	1 – 2 (1)
Linimentum chloroformi		828	
Mistura "		922	16. 32 (20)
Spiritus "		1344	1 – 4 (2)
Amyl nitris		168	.1 – 3 (2)
Buchu Rubacere		305	4 – 16 (10)
Oleum menthae piperitae		998	.06 – 2 (1)
Spiritus "		1344	.3 – 1. (.5)
" "		[illegible]	16 (16)
Oleum ammonii		990	.06 – 1 (.1)

Materia Medica Feb 23. 1882

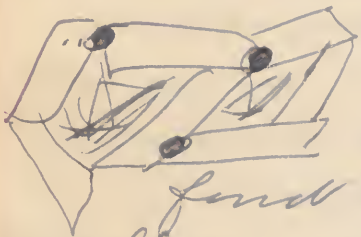
Internal use of Chloroform.
It is used as a solvent for many sub only one officinal. Chloroformi guttae putchae Drop on a lump or sugar is a good way to take it dose 10 drops
It is also carried in capsules of gelatine
Extemporary it may be mixed with any of the viscid fluids. There is a dilute sol of Chloroform in H_2O
1 — 1000.
Ether is used in various forms it
Nitrite of amyl is another prep of this class usual given by inhalation. and it causes flushing of face and rapid breathing. and causes a relaxation of unstriped muscles. After 3 inhalations are enough to start with. It is a good plan to tell the patient what the effect of the med will be. given internally in doses of 3 drops
Chloral in presence of the air is slightly deliquescent.

It is given dose to dose in which it is used to any extent frequently given in syrup
Has a flavor like roasted english walnuts should be largely diluted with H.O. given subcut. but painful. best way is to give it internly. dose is 1 gram. It is somewhat dangerous medicine and should always administered with caution. Good way to give this is to put each dose in a seperate bottle and sealed up. and thus it keeps good ~~and is always~~
Iodoformum. most of H2O. sol in Ether alcohol. chloroform. Used externly as a stimulating anti. and also given internly it is unirritating. best given in the form of a pill.
Dose for internal admin is a decigram

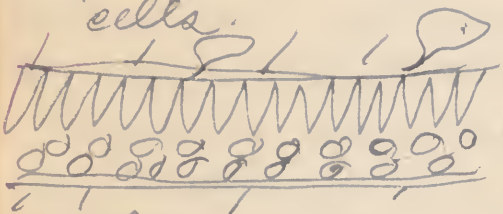
Essential and volatile oils
Camphors resins, gum resins
and balsams

Essential oils are usual already formed vegetable products. and are insol in the juices of the plant, and occur as seperate and distinct masses

Appearance of ginger under the microscope showing the starch granules and in every few cells are seen the vesicles or masses of the essential oil



Long lenticular shaped cells of sweet flag. and here the oil globules are found at the junction of round cells.

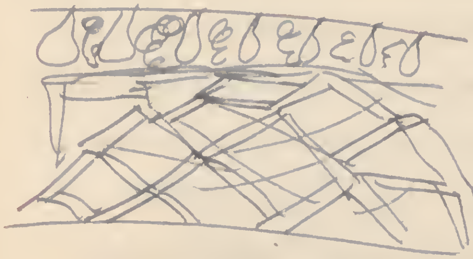


Showing the position of oil globules in the eye.

In some plants the cells of essential oils are in a capsule with a long pedicle

In Buchu and orange ~~leaves~~ leaves can see the cells of the essential oil with the naked eye

Cell on the outer rind of orange



appearing on the outer
layer of the rind the
inner tissue thicker
being of fine connec
tive tissue

Cut through a piece of
pine wood. showing oil
cells. In the parsnip fruit the
oil cells are found.

Cut showing the latter

In some of the fruits the oils are
found in the form of emulsions
such as gamboge ~~tt~~ tree.

Prop of these oils. these are not
usually found single but you ~~st~~
have several mixed varying
only in their densities and
boiling point and their reaction
with polarized light

This is the case with the oils of turpentine, and are separated by carefull fractional distillation then again they are associated with oxygenated oils these are separated by the action of deoxidating agents. The are thought to be formed by decomposition oils - these are associated with less due to above mentioned agent.

Essential oils are pure white mobile oils and the longer they have been distilled the darker they are.

Some oils have a greenish hue when first distilled such as oil of camomile

In some cases they are of a bright blue color. These belong to family unutilized

Sp gr varies from 900 to 1000 more than 9/10 are below the density of H2O.

When oils are of diff density -
the same plant the best oils
are obtained from the lighter
altho the oils are sol - this
to extent of 1/1000. All sol - Ether
alcohol and chloroform. they
can be distilled and redistilled
without change.

They are usually separated from
the drugs contain, then by distill
ation. In orange leaf. by pressing
by hand upon sponge. In the
the prep of perfumes they are obtain
ed by packing - fat.

The oils prepared by pressure are
above the most fragrant

Orange family oils are found
Citrus aurantium. = oil of orange - fr
rind. - essential oil fr leaf. used
in perfumes. or oil prepared fr
the flower

Lemon - the same fr yellow
the same.

Bergamot = oil fr rind
Citrus. also given name

Mint family give a series of volatile oils. Lavender. peppermint
spearmint, rosemary sage. are in this list

Buchu pulv comp,

Umbelliferae = caraway anise
coriander. 5 N.O

Subjects for rec. May 9. 82.

Cinnamon Lauraceae 431

Tinctura cinnamomi 1441 (4)

Aqua 217

Lavandae 818
Spiritus Lavandulae Labiatae 1346 (3)

" " Comp 1847 (3)

Thymol Limnaceae 1023 (2)

camphor laurel 332
Spiritus camphorae 1344 (1)

Aqua camphorae 214 (1a)

Linimentum " 827

" saponis 830

Opium 4030
~~Tinctura opii camphorata~~ 1454 (.5)

Cubeba 477

Oleoresina cubebae ~~Lig~~ 975 (1)

Tinctura cubebae 1442 (4)

~~Copaiba~~ Copaiba Lig 459 (.5)

Copaibic acid 460 x

Oleum Copaibae 991 (.5)

Materia Medica Mar 2. 1882

Camphor is an oil solid at the ordinary temperature of the body. another is tymol and menthol is another. these melt readily and then have the appearance of the ordinary essential oils. Steauptene is the name applied to these. they are associated with a hydro carbon and have the formula of the hydrocarbon. These have great antiseptic prop. they are sol in 200 parts of H_2O Sol in all prop of alcohol.
1 - 1000 is right for an antiseptic

Resins are decom prod of essential oils and are very abundant. ~~they do not resemble. those~~ they are insol in H_2O. have an odor of the oil usualy are transparent, may be amorp or crystalline. Sol in either alcohol and ether some are sol in one of these and some in both. ~~are sol in~~ Some are sol in alk forming soaps.

Gum resin = ~~small~~ amt of vol oil large amt of resin. usualy more than one half and they also have a gum

2 l = H2O. When fresh = the plants they are = the form of an emulsion usualy white or yellow color.
The resin is not soluble but = a state of fine subdivision in the fluids of the plant

Balsams = these may then be gums a solid, all have essential oil and a complicated set of resin substances of crystalline and amorphous nature usualy which is benzoic acid

Myrtle family gives oil of eucalyptus. has a queer odor. the quite distinctive Eucalyptus globulus.

Eucalyptus globulus = these are an Australian tree and gives two kinds of essential oils. and the leaflets of these is a pure hydrocarbon
Leaves have a curved edge like a scythe, ~~Eucalyptus globulus~~

~~Fitzroyanus~~ Myrcia acris gives the oil of bay. and you also get the pure bay rum

Cloves. these are dryed flower buds- and are native or are found in south ern Asia Brazil. found of size of an ordinary pear tree

The tree is beaten and these little buds drop of and are gathered and dried and sent into com-erce. On section the great size of the oil cavity is remarkable and this has the largest % of oil of any crude drug in the world. It gives a pure colorless oil heavier than oil water and upon distill it gives eugenic oil.

Allspice or pimenta. this is a West India drug: gives an oil called oil of allspice and is a little colored. This finishes the myrtle family.

Nutmeg tree. this is a family by its self. Native of India. has a fleshy outside layer out of which drops the nutmeg of com-erce.

the ~~seed~~ aril of the fruit produce mace. this mace producing matter surrounds the seed or nutmeg and. comes out with the seed and is seperated after ward

Oil of nutmeg is obtained by pressure and has a large amt of solid fat, composed of palmatine and other fats.

It also has an essential oil which has the characteristic odor

This solid fat is know as oil of mace. though mace has none of it

Laurel - ~~ocotea~~ acacia champhor. sassafras. cinnamon.

Camphor, is prepared by putting pieces of the wood in a still and steaming and the camphor comes out in little drops - at this time an oil also is made called the oil of champhor. it is an essential oil

Cinnamon. bark of cinnamon zelanicum. cinnamomum from.

Ceylon, There is a tree growing in the south of Asia which is not cinnamon, and is curled as follows and is thick 

True cinnamon is thin and curled at both ends and is composed of various layers.  is is an almost solid stick

Sassafras. this is found above the northern and middle states and northern, the bark of the root is the part used

Essential oil come from all of the whole tree.

Pepper family. Pepper and cubebs are most import, Both are the fruits of the plant and are picked green because they then have more oil and resin. pepper is black. color. Cubebs are of same size and have a long stem. and this long stem assists in recognition of the fruit

The stem is a prolongation of the

cells. White pepper is got from the same plant and comes from the ripe fruit and the outer layers are removed and the center is used. Where as the black pepper is got from green fruit. Now the outer part of the fruit has the sharp stinging resin and have characteristics of black pepper. the middle has the fragrant hence the more agreeable taste and odor and of white pepper

Ginger family :- ginger curcuma cardamom, grains of paradise : galima In ginger and curcuma the rhizome is taken.

Value as med is due to essential oils and resins, oil is a simple hydrocarbon. resin is very complex.

Sweet flag :- has essential oil and resin : a resembles the ginger family.

Pine family := turpentine which gives oil of turpentine and rosin
Cass turpentine, Burgundy pitch
Oils of juniper and cedar - , oils of cade and tar these two latter are got by distillation
Oils have several sub. resins are rather complicated

White sandal wood = oil of sandal wood.

~~Gum~~ to Cyprian turpentine,
Bursera lentiscus
~~Cubebs = great tree in South America~~
Copaiba, found in a South American tree found in cavities in the trunk resin is the most important part and is much more agreeable than the oil itself.
Copaiba acid is amorphous and come from the resin there is also a crystal[illegible]

Balsam of tolu. and peru
Balsam of tolu got by [illegible]

The peru also comes out with

the and is dependent by disc.

Benzoin. similar - look in tolu and

peru. and furnishes benzoic acid

$$\frac{2|2|9}{23\frac{5}{9}} \quad 115 \quad 11\frac{8}{3}$$

Materia Medica Mar. 16. 1882

Tannic acid group. This corresponds to the vegetable astringents All veg astringents owe their astringent prop to some form of tannic acid or its comp. and all the tannic acids are astringent.

Lepo and smyrna ~~smyrna~~ galls.

These trees resemble the scrub oak of this country and grows along the eastern ends of Med sea. And the gall is drawn out by the irritation caused by the sting of a fly who makes a wound in a limb and deposits her egg. this cause an irritation and you get a hard nodulated growth covered with bark and as it ripening the maggot eats out and makes an opening.

Other oak are troubled by these or similar insects even in our own forests ~~Even forest~~

When this gall is compl formed you have a little globe of a dull

greenish color. In the best galls you see no hole. in the older ones you see the hole. Taste a strongly astringent and puckering. and sweetish Alepo galls are the best. - others are lighter in color and have a large hole.
Blue galls have twice the amt of tannic acid 80%
Also have some gallic acid abt 30% - You also sometimes get tiny narrow galls of the same structure
Japanese and true Chinese galls are caused by a different insect and on a different tree. They have abt the same prop of tannic acid and gallic acid as the blue gall but these are not officinal
Gallic and tannic acid are ... of gall. Tincture of gall - these two latter are

seldom used.

Tannin. In the bodies one it includes a group of vol which have all the same prop. they are all acid in reaction with salts of iron. ppt gelatin and albumen and are all astringents They are supposed to be decomp products of enzymes &c. sub.

Gallo tannic acid blue black with salts of iron.

Put every plant has some pertinent in the tannic acid which it produces.

Gallo tannic acid is the one commonly used and is made by dissolving the powdered galls with very little H2O & pouring it over on a damp night and then moistened with ether and stand 48 hours and expressed - again moistened and expressed and the two fluids distilled

Put it in never pure

is never pure. or crystalline
It is of a buff color. sol in.
ether to which H_2O has been added
It ppt all alkaloids most met
salts. Slightly decom by ht.
and get pyro gallic acid
and meta gallic acid is left
Glycerite of tannic. 1 of tannin &
7 of gly. suppositories. troches.
and ointments. When it
it is given it is not worth while
to give it with any other sub.
as it will prob ppt it
Gallic acid. galls mac with
H_2O of month. liquid thrown away
and they are boiled with hot
H_2O and distilled. then is left
in the form of crystals. ~~Does~~
Sol in alcohol. ether.
Only offic prep is the glyc. and
oint
For local application is best
For internal gallic acid.
because tannic is decomp into

the stomach dose .2 - 1. gm
cataghne. ~~and~~ cinnamic. to
~~kino~~. Catechu. guaranin. rubus.
epiem. pomegranate, red rose, haema
toxoline.

Materia Med. Mar. 23. 1882.

Bitter tonics. No medicines or nearly none
have only one action but have more than
one. ~~Nearly all drugs~~ Drugs have
an action of their own.

Bitter tonics are widely distrib through
out the vegetable kingdom. They
are not nauseating and are
followed by increased appetite. They
are divided into mineral and veg
etable. Vegetable act through the
stomach. Bitterness exists in all
parts of the ~~stomach~~ drug.

Nux vomica active principles are strychnia
and brucia. ~~In many cases~~

In many cases the bitter principles
have never been extracted as such
Most of them are soluble in H_2O
and in the fluids of the mouth

Gentian family a powerful bitter
This family does not possess these
are no alkeloids in these trees, and
the bitter principles are neutral
Cinchona. have a bitterness these
alkeloids quinin. &c
Magnolia have. bitter principle
Dog. wood. and Loosestrife family
will have active bitter properties
(Betonica a active principle of bitter)
All these means digestion and
promote assimilation and
increase the appetite
If these results are not obtained
stop them. they are given before
eating, if it to does before eating
take it after.
All bitter tonics are acted upon
or at least to a certain extent,
Gentian is most valuable of all
the bitter tonics except perhaps the
Alkeloids. Has a milky juice
bitter are use bark in stem or
trees. The roots are large fleshy

and devoid of woody tissue. found in Europe and America. they are 4-5 feet high. root nine or ten feet long. the root is the important part. It grows in the high lands. not in low lands and much drier. come from Switzerland and Spain. ~~Gentiana lutea~~ Gentiana lutea. This is the principal kind and is the officinal

American gentian has small fibrous roots

Gentian picrin is the active and peculiar principal of the gentian powder It is a glucoside.

It should never be given with a free mineral ~~acid~~ as the tonic effect is destroyed. There is no tannin in this drug. It should not be given with the tincture of chloride of iron

May give one before and the other after meals.

℞ Sabadia. quassia.. part used is the wood. and is yellowish color

It has no tannic acid.
Columba. order menispermaceae
Columbin is ~~the active~~ one of the active
principles. columbic acid. berberine
~~Gold thread~~. This order is
important, gold thread is a
common domestic bitter tonic.
Cimicifuga is also one of the
important bitter tonics
Magnolia ~~(Liriodendrine)~~. ~~Cinchona~~
is used as tonic. (active prin. = magnolin) Liriodendron = (Liriodendrine.)
~~Cornus.~~;
~~Galls.~~ ~~method of all of~~
~~Acidum tann~~ ~~these mentioned~~
" ~~gallicum~~.
~~catechu~~
~~Kino~~ 799
~~Areca~~
Geranium
S~~pirea~~
Rubus.
Gentian
Co~~lumba~~
Li~~riodendron~~ ~~Cimicifuga~~ ~~with iron~~

Sub for recitation Mar 28

	N.O	Page.	Dose in gms
Galla.	Rubiaceae	667	
Tannic acid	Cupuliferae	86	.5
Gallic "		45	1.
Catechu	Leg —	370	X.
Tinct of "		1439	4.
Kino	Leguminosae	799	X. 6.
Tinct "		1449	6.
Krameria	Polygalaceae	800	.5
Tinct "		1450	6.
Geranium	Geraniaceae	679	2.
Spiraea	Rosaceae	1337	.3
Rubus 2cd ex	"	1235	
Gentian 7ca ex	Gentianaceae	677	1.
Ex 7cd ex		579	.3
Tinct "		1446	6.
Columbo		326	1
Tinct "		1436	6.
Quassia 3d ex	Simarubaceae	1194	4.
Ext "		590	.2
Tinct "		1456	4.
Chamomile	Anthemideae	470	3
Anthemis	"	181	.3
Oil		984	

Infusa · catechu	763	50.
" " comp	763	#
Anthemedis infusio	760	64.
Infusa · columbae	761	64.
" gentianae	765	32.
" quassiae	768	64.
Suppositories of tannic acid	1382	
Syrupus · rubi	1400	6.
" Granatae Granatae	1395	3.
Acid & Extract of Hydrastis	609	6.
" " " columbo	597	4.
" " " gentian	603	2.
" " " geranium	603	4.
" " " rhatany	606	2.
Glycerinum gallici	685	
" tannici	686	2.
Troches of catechu	1474	
" tannic acid	1473	
Unguenta " "	1483	
Unguentum gallae	1486	

Astringents. all you need remember are 9. in number

Galls
Cotesaku
Kino
Krameria
Geranium
Hamamelis gallic & tannic acid
Rubus.
Haemoxylon
Spinea

Bitter Tonics are 3. important
Columbo and nux.
Quassia
Anthemidis
Gentian

Tannic acid = astringent
taste of glycerine

Tannic acid should not be prescribed with any other active principle in medicine chemical principle.

Nearly all the astringents come under this head.

Digallic acid is the latest chemical name for ~~tannic~~ tannic acid

Usual strength of ointments is one to sixteen. (1—16)

Neither tannic or gallic acid should be given with the salts of iron

Gallic acid does not ppt the alkaloids
Tannic does
tannic gives inks with ic and ous salts of iron
Gallic with ferric inks with ous. not with ic

[redacted]. Materia Med. Apr 13, 82

Alkaloids

These are of varying comp and prop. taste and solubility — But they are alk in sol. unite with acids to form salts sol in alcohol and ether insol in H_2O apt to be crystalline and a pretty def chem comp.

They were discovered in 1816. by a Dutch apothecary.

They are found in both hemispheres. and as a rule in warm regions.

As a rule the classes of drugs have alkaloids of a more or less similar character

There is no part of the plant which may be said to yield the alkaloid exclusively but some parts are more adapted for obtaining it
In the ~~cinchona~~ cinchona may be said to come from the bark.
Nux vomica comes from the seed of a plant
Pilocarpin comes from the leaves and in all plants the alk are present in solution in the juice of the plant
In the case of the poppy the juice is taken and dried and you get opium. As a rule the older the plant the more the quant of the alkaloid. Beyond be certain age however the diminish.
In temp parts of plants (leaves) it is gathered at maturity this is time of fruit. but it should be taken just before it ripens and after it has attained its full size

They seem to be degenerative products of the plant, waste products so to speak
They have no particular odor. as a rule
The effect of cultivation on the alk varies. particularly opium and cinchona. These are much increased greatly by cultivation
Some of these are very unstable others are very liable to decomp. but as a rule they may be said to be permanent.
They are usually combined with some vegetable acid forming a salt
Morphia with meconic acid.
Quinia with a tannic acid
Rarely they are free as narcotine
Nux vomica contains strychnia and brucia
They are extracted by replacing the natural acid by a mineral acid in this country H_2SO_4 is used it is then extracted by means of percolation. then dry is next

by a mineral ~~[illegible]~~ Alkalie and is then purified in vacuo in vacuo.

Some are sol in water then the process of decolorization CCl4 is not needed. Some are sol in C_6H_6O

All the alkaloids have the ammonium nic. in Americans use the ammonium ca. Morphia

They all have carbon hydrogen nitrogen oxygen. C. H. N & O.

Codia may be made artificial a my others. By the decomp of some of the natural alkaloids

In general they are solids. They may be crystalline or amorphous. White or colored usually they are usualy mine or be colored

Rarely they are liquid only 4 or 5 of these are known. These are all volatile. (Coniud) There also usualy have some Solid solid

In order they should be white when not so there purity is

doubtfull: all sol in alcohol
most of them are sol in ether or
chloroform. Usualy insol in H_2O
~~but if th~~ But are a little more
sol in acid sol. These preparations
vary ~~from~~ in plants from 1/1000 to 1/10

Administration

The permanente ones may
be given ~~in~~ powder. or pill
form, ground up with sugar
of milk ---- in some case they
may be made into pills as is
the case with Quinnia

If sol in water may be given
thus. or if sol in acid sol
may be given in the manner
(insol)

Read up. Nux vomica. strychnia
Brucia. ignatia gelsemium gelsemium

Materia Medica. April. 20. 1882

Order ~~Papa~~ & Poppy. family. They have large showy flowers and secrete a milky fluid. The fruit is in a capsule and has numerous small seed and on bruising yield a nauseous and disagreeable odor. The juice is emollient irritating to the ~~skin~~. The plants are not tropical as a rule. This is found in temperate regions

The leaves do not appear as early as the blossoms. The leaves are broader than long and have one or two lobes on the sides.

Sanguinaria with the elk of flood root is sanguinaria. This contains resinous coloring matter dose of drug 1-4 gram Tincture 1-8. dose of = 60-80 drops.

Neither are much used.

8 grains of sanguinaria dose 2-8 grains

This is quite useful in cough mixt.

Poppy ~~Papaver~~ is an annual growing to a less height than the opium. Poppy has red petals from which is made a bright red tincture

Papaveraceae - the opium poppy
this are cultivated in our gardens.
There are three kinds of this one
found along the Mediterranean and
two other kinds. Papaver album this
is found in England and is cultivated
in Persia and is used for products in
of Persian opium. The capsules are us
ed as an article of Med especially for
opium. Sometime papaverine have been found
in the capsules of the white poppy.

Opium is the dried juice of these
plants and is obtained from the cap-
sule. It is the purpose of getting opium
the poppys are cultivated as they
produced larger units of the sub.

It comes to us of a dather dark
color often and comes mostly from
Asia Minn. when the cultivation is very ex-
tensive. Sol in H_2O to extent 50-55%
and yield 75 or 80% of morphine
matter as an ash.

Egyptian opium. Little yellow flakes
Rhoeni. is hard round balls.
European opium seldom found - East Indian

opium given to Chinese and is used at home
Read up opium eating mania

Materia Med April 27 1882

Turkey opium is the one used in the drugs of [illegible] and comes from Asia Minor. Opium has 18 alkaloids, Morphia, Codeine, Narcotine, Nicotine, [illegible] the [illegible] of the [illegible] most important ones.

Morphia [illegible] to the extent of [illegible] in the [illegible] opium, 22 [illegible] for [illegible] opium [illegible] [illegible] 2 [illegible] [illegible] has 9-3 [illegible] Morphia [illegible] [illegible] [illegible] which [illegible] [illegible] may [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] in common use.

There is an [illegible] [illegible] [illegible] Morphia [illegible]

Codeine is [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Subjects for recitation May 4. 1882

		Page.	
Nux Vomica	Loganiaceae	960	
Strychnia		1352	
Brucia		961	
Igasuria		961	
Ignatia		754	
Gelsemium		674	
Opium (Papaver 1056)	Papaveraceae	1030	
Sanguinaria		1253	
Dulcamara		518	
Capsicum	Solanaceae	347	
Belladonna		274	
Hyoscyamus		747	
Stramonium		1356	
Dulcisia		517	
Tobacco		1404	
Prep of opium			
Acet tincture of opium		1454	.5
Extract " "		587	.03
Tincture " "		1453	1.
Camphorated " "		1455	1.
Opium pill		1454	1.
Compound soap pill		1150	.06
" opium pill		1102	1.3

Tinct ferri acetat
Ex of opium
Tinct " "
Deodorized Tinct " "
Camphorated " " "
Opium pill
Compound " "
Extract of belladonna. for ointment and pills
Ointment " "
Extract of hyoscyamus.
Ointment " "

Compound ipecac. - powder 1.
Extract of belladonna 57 .81
" " " Fl. 59 497 .3
Ointment " " 1484 1.
Tincture of opium 1438 6.
Extract of hyoscyamus 583 .3
Fl " " 605 .5
Tinct " " 1448 4.
Extract of nux vomica 586 .1-.2
Fl " " " "
Ointment " " 1452 1.
Morphia sulphas. 937 .01

Percolatum. 593
Repercolatum 595.

Materiae. Med. 82. May 11.

Cinchona. (Rubiaceae). This includes some very useful drugs. Ipecacuanha. coffee and Cinchona are the 3 principal drugs. Symptoms are dry pleurisy

It is confined to the Andes Mts in S. America. The temperature of the region is temperate. and elevations get freezing. and there is much moisture and fog. They grow on the mountain slopes. The best kinds grow abt. 6 to 8 thousand ft above the sea.

They are either shrubs or trees and the trees are from 30 - 80 ft. They are evergreen. Leaves are opposite and oblong. and other forms.

The genus has from 34 - 40 species of it. The cinchona trees are becoming rare and very scarce.

The bark of the root and of the other tree are used.

Flat and quill. bark the flat bark.

comes from the roots and large branches and trunk the quilled come from the small branches.

Color of the bark varies from a brown to a dark red: and it is very bitter.

The different kinds of bark are the yellow bark cinchona flava from cinchona ~~calisaya~~ calisaya this comes from the southern districts. This is the best of the barks. And it has little deposition which are called digital deposition

Cinchona pallida this is entirely out of the market. Cinchona rubra. These are the three kinds

1852 was they first introduced into Goa. These barks have produced quina & quinidia. cinchonia and cinchonidia quinidine, quinidine, cinchonidia, and cinchonia this is the order of their value there are also two others not of any great value which has just been discovered in India from quinic and cinchotic tannic acid are they are the acids with which these alkaloids are in combination with.

Materia Medica May. 18. 1882.

Cinchonidia yield crystalline salts when dried Quinia. Quinidia. Cinchonia yield the same. All of these are capable of decomp. with certain acids yielding an other class of comp.

~~They effect~~ The effects of these 4 alk. are abt the same. Quinia is most import. next quinidia. this last has been thought to be even more active. The ~~dose~~ cinchona cinchonidia. the dose of these is abt twice as large as that of quinia. They are less soluble than quinia. Kinic acid is the acid with which these are usual associated. The coloring matter of the bark is cinchona-bark. (tincture

Decoctum cinchonae flavae. Comp. tinct (Quinia. Decoct cinch. rubra - infusion and comp. tincture.) 1st these are the import ~~[illegible]~~ compounds made from the yellow bark. 2d from the red bark. The yellow is

supposed to contain the most quinine. Extracts and Fl-d extracts of cinchona. Sulphates of these comp. are used more in this country. Acetates and muriates are used also.

When ordering a solution of these salts add to the mixture as much dil H_2SO_4 as you have grains of the cinchonia. Thus if you order 4 grains to 100 of fluid you would add to it 4 grains of H_2SO_4 this amt will always dissolve the cinchona.

Citrate of iron and quinia. Salicylate of quinine. Valerate of quinia these are three soluble ~~of~~ official comp of quinia.

Syrup of licorice used as a soluble vehicle for to give quinia in.

~~I Hecacuanha~~ Ipecacuanha this is a Rubiaceae plant of the same order ~~rubiaceae~~ rubiaceae and they grow in clumps like huckleberry bushes.

The drug is rough and tough and quite wedgey

There is one alkaloid. is of a light brown color. forming salts with the acids. Called Apocin

Wine. Syrup. fld Extract. powder. This latter is the best. for an emetic Dose of powder 1 grm. fld ex. 1 - 1.5 grm Syrup 30 grm. As an expectorant Syrup and wine 4 grm

Coffee. This is a tree found in ~~Southern~~ Africa and East India - and has been cultivated in Arabia Mocha - Java. Rio These is the order of these berries in order of their value. Caffeine is the alkaloid

Tea. active principle is caffeine

Paulinia Sorbilis

Erythroxylon ~~thea~~ Coca. Ilex ~~paraguayensis~~ paraguay

Jaborandi. alk - pilocarpine

Wine comp powder. 1189

Comp iron pill. 1097

Myrrh. 36. ~~Carb~~ of Na. 18. FeSO4 18

Syrup a sufficient quantity.

Materia Medica. May 25 82.

~~Stegmine~~.
~~Stigma. (alk. is to stegmine) Calabar bean is a common name.~~

Physostigma, Calabar bean. Lobelia. The seeds of this are very small. The plant grows commonly in North America Is not much used except as an expectorant and in cough mixtures. It is a very dangerous drug as it may not cause vomiting and acts as a poison. has no alk. wine is best prep.

Maculatum conium. Leaves and fruit are used no good
Conia is the alk. is a brownish liquid
Fld extract of the fruit is the only thing worth using except the alk which is hard to get

Ergot. This is a fungus growing on the head of

many grasses. and is
taken. In a certain stage the
botanical name is claviceps.

Found around the seed
and berry.. it is usually taken
from rye.. It has none of the
rye in it. but is a separate
growth. it is propagated in two ways
by budding and by true fructifica
tion. It spoils very quickly and
should not be used when over
a year old.

Extract of ergot. called ergotine
~~and~~ There is also an alk. ergotine
2d alk ergotamine. has been found
to found to have active principle.

Sclerotic acid is obt. from the
drug. Fld extract is the best. prep
in the market at present.

Aconite native of Southern Europe
There are several kinds.

The roots look much like horse
radish root. Active principle

in aconitia
European yield most aconitia. Japanese yield most ~~aco~~ pseudo aconitia both yielding the two but in reverse - proportion
Recitation. ~~May~~ June 1st 1882.

Cinchona	Rubiaceae	414
" rubra		415
" flava		414
" pallida		414
Quinia		424
Quinidia		424
Cinchonia		424
Cinchonidia		424
Tinct. Cinchonae. flavae		1440
Decoctum " "		498
Comp tinct " "		1440
Tinct " rubrae		
Comp " " "		
Decoctum " " "		498
Extract & fluid extracti of .. rubrae flavae		575
Citrate of quinia		
" " " and iron		627
Pill " "		1101
Valerate "		1212

Tincture Cinchona		783
Alk. Cinchona		
Wine		1524
Syrup.		1395
Fld Extract	Rubiaceae	605
Powder		1147
Coffee		310
Tea.		=
Jaborandi	Rutaceae	1084
Alk pilocarpini		1084
Ipec.	Aquifoliaceae	754
Physostigma	Leguminosae	1078
Alk Physostigmia		
Ergot	Fungi	541
Fld ergotine		543
Extract of Ergot		601
Powder.		
Aconite	Ranunculaceae	93
Alk aconitia		98
Conia		
Lobelia.		

Materia Medica. May June 1. 82.

Recitation

~~℞ Hydrarg. Biniodid gr. ii~~
~~Potass Iodid. ʒ vi~~
~~Syrupi aurantii~~
~~Aquae aa ℥ ii~~
~~M. ʒ i T.D.~~

℞ Hydrargyri Biniodidi gr. iv
Potassii Iodidi ʒ iiss
Syrupi aurantii ℥ iv
Signa one teaspoonfull in water morning and evening

℞ Hyd. Prot iod grs XXX
Pulv opii .. V
Ext gentian M
Signa one pill morning and evening after meals.

Materia. Med. June 8. 1882

Veratrum viride This is a native of S. America alk. is Veratria

Veratrum album. is another kind

The centic are the same - but their action is very diff. The 2 alk are - depressants and purgatives but the album is much more active

Viridia veratrina veratroidia. are the the other alk.

Colchicum the corm is the part used. Colchicin is the alk.

Digitalis (foxglove) Biennial. stem comes the 2d year. long narrow leaves

The leaf - used - and contain the active principle. Alk is digitalin digitalina & a glucoside. Tinct Extract & powder. Leaf & tinct are the parts used: Tincture - the best prep

Squill. This is the size of a large Bermuda onion and bears general appearance of the onion - Except that the leaves are flat in stead of round

there have a good deal of gum.
in resins. Vinegar and syrup
of squill are two very fine prep.
Sarsaparilla, It had a great rep.
at first as a cure for syphilis.
Grown in the green Brazil and have
long roots. and are a little thicker
~~at the smaller~~ at the ends
than in the middle.
and are quite long. 4-12 ft.
Mealy and non mealy. the
mealy indicates the amt of starch.
Decoction. tinct. comp syrup. this
last is good for a flavoring mix.
. White Sandal wood produces "oil
of Sandal wood
Cusso. ok cusine. 1℞. flour 1 pt of
hot H₂O. drink. good remedy for
tape worm.
Pomegranate ok. —
Capsicum
Pumpkin seed - are all good for
tape worm.
Santonin
Pinkroot Male fern

canthuride of active prin in canthandine. tinct good for stim liniment. used also for blisters
Cerotum cantharides.
Cathartics
Senna. cathartic acid Leg 1287
Colycinth colocynthin. 446
Elaterium. elaterin Cucurbitaceae 520
Jalap. convolvulin (resin) 792
morning glory family a dose scammony)
Scammony jalapin convolvulaceae 1275)
Mandrake - podophyllinum resin 276, 1123
Gamboge - gum resin 669
Aloes. aloin 135
Rhubarb. ~~rhotarbaric~~ acid 1224

Berberideae.
Guttiferae
~~Liliaceae~~ Liliaceae.
Polygonaceae

Causes.

Sayre Running jumping. over Excitem. Skating Sitting down on a cold stone a cold floor or any other extraneous accident which may produce inflam of hip joint

These are the causes mentioned by Sayre - as giving rise to inflam of this joint. ~~He~~ further says that if this occurs - a person who formed a strumous constitution ~~should~~ it will go on unless arrested. will go on to produce deformity, anchylosis, and shortening and may terminate in death.

He qualifies his remarks by saying that. this - the opinion ~~ha~~ of Surgeons for the last 25 years and has been generally taught and received. and that age and authority have rendered a sort of Surgical gospel - to rebell against which proved be heresy and blasphemy,

From the rather sanguine tone of these remarks it - quite evident that Dr Sayre does not agree with the doctrine which has been taught and accepted for so long a time. For further proof of this statement that most practitioners agree that it cannot be cured by any artificial method of treatment

A statement which in my mind is much - as much as the writer does not mention the stage of the disease. It - quite evident that no System of treatment will restore destroyed bone. By restore I mean restore it to its former condition. Of course an improvement in growth of disease may take place.

Not until we have paid more attention to local treatment shall we meet with much success in the treatment of this affection.

and argues that the fact alone
proves that the disease cannot
be constitutional for how can
local treatment influence a
constitutional disease, and
moreover he says that he has
been able to trace the majority
of his cases to a direct trauma-
tic origin and that most
of his patients were of a
robust and vigorous con-
stitution previous to their attack
and that the constitutional
disturbance came afterward
and was entirely dependent
upon the hip trouble, instead
of the opposite state of affairs:
a weakened diathetic
state and that the common
error that the effects of the
disease have been mistaken
for its consequences - and
for there are no other troubles
which are capable of producing

more severe constitutional trouble
than diseases of the joints, and
we often see cases of phthisis super-
added ~~the cause of~~ following
upon such disease.

Dr Sayre gives a list of
143 cases in which 131 were
clearly traced to traumatic injury
directly over the joint. and that
in only 3 could the disease be
traced to no definite cause
unless we consider a constitu-
tional cause a direct one.

~~From~~ He later makes a
remark which seems a little
like a loop hole - to be used
in case of need - when he
says that in many of the
cases it requires the very closest
examination to find out the
cause. for the disease does
not usually follow directly
the injury but that it sometime
does not happen for months

after the accident so that the patient and his friends have naturally forgotten all about the accident and its connection with the disease - until especially reminded of it by the investigator.

Looking at the matter in a perfectly unprejudiced manner I seems to me as though Sayre by this last remark - had so to speak - cut the bridge behind him. For it seems to me that in any person suffering from no matter what we could get a history of a fall or jar or jump of some kind within a space of months and since it is a well known fact that people are perfectly willing to assign for a ~~cause to say~~ jump, bruise or fall as the cause of every joint trouble. it seems as though it would be a pretty easy

matter to get such a history partic
of the surgeon be looking for
such. Moreover he says with
[illegible] the family history
of her so called white patients
A person at term of a phthisical
family may present all the
appearances of white swelling
and often be [illegible] until they are
stricken down with the disease.

Sage. Symp.

He divides the disease into three
diff stages. 1st characterized by
inflammation. 2d. by Effusion.
abduction and apparent elongation
3d by Rupture of capsular ligament
[illegible] adduction and apparent
[illegible] shortening.

1st Stage: detail In cases where
the inflammation is of a com.
grade. such as we usually find
in those of a strumous diathesis
the symp are obscure and diff
of diagnosis.

and are often referred to the knee instead of the hip then frequently often leads astray the careless or ignorant observer and many a child is treated for trouble in the knee when it is really in the hip joint. The child walks with a limp which when once seen will not be forgotten or mistaken for anything else.
The child stands upon the well leg and throws the lame on forward. The flexion of the diseased limb is also very imperfect. The knee on the affected side not being capable of being flexed sufficiently to bring it against the chin. Where as the other readily is. Pressure upon the soft parts over the joint is direct pressure over trochanter or in short any form of pressure which tends to force the head of the bone into the joint produces pain

Rolling the limb slightly in an [illegible]
bone pressure. at once relieves
pain and if careful examination
be made with pressure and ex-
tension no difficulty will be found
as a rule in diagnosis. We also get
in most cases an atrophy of the
muscles of the affected thigh which
in many cases is very slight and
indeed usually in the first stage
There is one set of symptoms however
which is very characteristic even
in the very early stages of the
disease. If we look at the
muscles of the thigh we shall find
many of them quite strongly con-
tracted. and often very strongly
and on attempting to flex the
leg we shall get more or less
resistance accompanied by a
twitching or spasmodic action
or reflex. which is a very
important and characteristic
symptom.

2d Stage

Here we have stage of effusion which if much in amt will produce a peculiar deformity. An apparent elongation of the limb & flattening of the nates on the affected side the nates being lower on that side than on the sound side. You also get at this stage an apparent anchylosis which is produced by muscular contractions, and the thigh is slightly flexed on pelvis and leg on thigh. This is of course due to reflex action and serves the purpose of keeping the joint still and gives us an indication of the treatment to be followed.

The flexors, the tensor vaginae femoris, pectineus, rectus femoris are so firmly contracted that the whole femur moves with the pelvis acetabulum. That this does not depend on bony anchylosis as it

the time — forced by puncturing the joint. when pus either is almost or etc — by cutting the muscles.
Then the power of liquid enclosed — a joint being able to produce false anchylosis — shown
And experiments have been made by injecting the hip joint through the pubic line. by which procedure. Eversion. abduction and immobility of joint were produced.
3d Stage. The disease if not arrested — goes on to caries and perforation of the acetabulum or ulceration and rupture of the capsule of the joint, which causes an effusion of fluid which ~~[illegible]~~ might be either synovial or pus into the surrounding tissues which eventually produces an opening some where in the thigh, in many instances at some distance from the joint. This rupture often gives rise to the fact to often

that dislocation has taken place
from the suddenness of the occurrence
When the abscess ruptures and
no adhesions have taken place
the limb seems shorter and - add
ucted and inverted, and is almost
opposite to that of the 2d stage
This adduction - spoken of
by Sir Charles Bell - and doubtless
gives relief by removing to a certain
extent the head of the bone from
the inflamed cavity but the result
is actual dislocation - many
cases Syme says he - no case
has true luxation been found -
though - some cases apparently
the same thing due to the erosion
of the head of femur - - its
becoming separated from the bone
and being left - the joint
then allowing the upper part
of bone to slip upwards and
simulate the true luxation

In making a diagnosis hip disease must not be confounded with Sacro iliac disease. In the latter we get the elongation of the limb which we get in 1-2nd stage of hip but "hip elongation" due to effusion into hip joint and is demonstrated by measurement from sup. ant. spine to int. malleolus. Where sacro iliac there is no elongation but there found the seat of pain - also diff. - is same area tender when press along joint of sacrum and ilium. In hip you also get a ~~mobility of~~ ~~[illegible]~~ joint and the movement of spine as seen by putting hand under patient and lifting leg the spine which before describe a curve will come down hard against the table; treatment of first stage. All authors whose opinions are worth anything agree that the treatment should be perfect rest

and mobility of the joint and relief of the synovial membrane for all irritation pressure from. Together Synovitis with tenderness and general stimulation as may be seen. In such case, the application of Iodine or some other counter irritant at the time may give some relief. Now when the joint is left to itself we get a constant and irritating pressure due to the reflex contraction of the muscles which irritating pressure not only tends to destroy the joints of pressure - but by the pain caused tends to exhaust the strength of child and occasions so to speak the nervous resistance

Causing spasm during which there - much suffering ensues. By the constant pressure of the two inflamed surfaces there - may or may not be destruction of the head of

the lineaid of the acetabulum. Hence we have to apply some method of Extension to remove the constant and depressing cause of suffering. We at this stage not only wish to relieve pressure to a great extent but also to keep the joint quiet to do this there are many kinds of apparatus.
But at the stage when we have a chance of getting a cure without loss of motion it is imperative that the splint be removed at short intervals - and passive motion of a mild and gentle character given care being taken to make gentle extension to remove the inflamed surface from contact - a shock or jar - and lest we start up the irritation anew. If the passive motion - not given longer stage loss of motion - the joint results. 2d Stage lasts usually -
[illegible] - sudden & 1st & 2

certain extent. We keep up the ~~pressure~~ Extension constantly. And in order to get rid of the effusion we may apply counter irritation - leeches etc. to joint. But best of all - to build up condition of patient and of self of well to be able to move about put a some kind of splint and with high shoe and crutches get him out - open air. If pressure from effusion become very great and there is - danger of rupture of capsule Sayre recommended puncture of hand great trochanter and evacuation of fluid. But - may cause the inflammation - of so severe a character that - the patient cannot stand the slightest move and has to be kept absolutely at rest.

We have - the stage according to Sayre a rupture of the ~~acetabulum~~ capsule - a perforation of the acetabulum. Rupture being the more common - and the fluid within pus or lymph

Toxicology Prof Wood Mar 31. 1882.

[For 41] Tartaric acid this resembles that of oxalic acid in nearly all its symptoms, but the blood in the stomach is fluid and vermilion in color. chemical analysis is very diff. because it is used so commonly in household food. it is converted into carbonic by digestion and hence cannot be detected after absorp.

Evap to dry. extract with alcohol. drive off alcohol. adding a little H₂O

dissolved into 2 parts. 1st neut with potassic carb. and then add the other half and you get the acid tartrate of K or cream of tartar which occurs as prismatic crystals of acid tartrate of K. This test is good for ammonia salts. ~~tartrate of~~ Caustic potash Potassic carb. as special tests

In trying this charring test do not use platinum foil

treatment is to give dilute alk.

Alk. ~~potassium~~ ~~act~~. These are similar to the corrosive acids reaction of corrosion. ~~but reaction acid~~ alk reaction on.

The destruction of tissue is more extensive, paste. Caustic potassa

Because the acids form comp with alk which are insol

Alk. carb. & hydrate. and. ammonia comp are the principal ones.

~~NH_3H_2O~~ NH_4HO ~~affects~~ the air passages particularly. treatment should be acids vinegar. The pain is greater than that of the fixed alkalies. The organs should be sealed up at once. as carbonates are formed by absorp of. carbonic acid from the air

Sodic hydrate comp is a white powder.

Test for potassic hydrate is the reverse of the tartaric test

Recovery is very rare in olk poisoning

Phosphorous. This is a very irri-
ous poison. and a very common
one the symp do not come on very
quickly. and is apt to be overlook-
-ed Vermin poster and matches
are the principal sources of
~~insect poison~~ accidental Poisoning

Stick phos this is poisonous. the
the Red is not and is ~~crystalline~~ amorphous
where as the stick is not.

Red phos in ~~matche~~ matches is
not poison

When used criminally. the ends of
are soaked in coffee or tea. If these
are soaked to long. the phos is oxidized
into harmless phos acid. or not
long enough. or he may not stir
it up.

A good many hours elapse. before
symp come on. gas comes from the
stomach tasted like garlic and
if seen in dark has a phosphorescent
glow.

Time 5 — 18 hours.

Common fm. Nervous fm. Hemorrhagic fm. These may be very or combined

Common fm time 5—6 hours. fm w thread swollen tongue diff w deg.. vomiting not bloody w dark w phosphorent fm a slight garlicy odor. Chill, drowsiness. Urine abdo men but fm 24—36 hours the they stop but the pulse w still feeble and the patient collapsed

But w fm 2-4 days sudden death may take place - often between the 2d 4 dy. Jaundice appears

Some w the of NH_3 in regard to jaundice (As, Sb, Bi, PH_3; NH_3 all then act much like and produce fatty degen)

When the jaundice appears (more def) get headache - fatty matter in urine delerium coma and death w fm 6—12 days.

2d fm Nervous.

Symptoms depend w action w nervous

sypton from membrane. cramp-
tingling. Jaundice in some cases - then
delirium coma & death 6 - 12 days
3d - death - not so early. vomiting
bloody. stools bloody. life may be
prolonged untill the enlarged liver
may be diminished. Colic at limit
and 3 or 3 - 4 week. death from hem-
orrhage - which comes from all the
mucous memb. and there are hemorr-
hagic spots under the skin.
Recovery from phos. is rare and
the prognosis is always very. doubtfull
unfavorable.
Phys. action of phos.
1 That it is oxidyzed at expense of
O in the tissue and blood
2d that it is absorbed in such and
acts after absorp.
3 That phosphoretted hydrogen is
produced and causes death
The 1st is . . . . is true to a
limited extent - as in the second.
If it be injected free into the blood you
get an entire diff set of symptoms

In regard to the 3d many say that it is inpure. ~~others say that it is~~ And that the gas is at once oxidized and becomes harmless. but this depends on the way in which it is prepared. if prepared with nascent hydrogen. you get the regular symptoms and post mortem appearances. and ~~Howard~~ says that the last is his ~~[illegible]~~ view.

Shorter period of death is 3 hours. fatal dose from. 1-3 grains but a much smaller dose is often fatal in children. Two matches in a child - 2 ~~[illegible]~~ months old.

3 or matches have proved fatal in one of an adult. Match = ~~[illegible]~~ .01. of grain if taken in latter grant [illegible] in food in alimentary canal. If taken in fine paste or after cooking you get no irritation

Usually you get ecchymoses in the mucous membranes.

Fatty degen of liver kid heart

and muscular tissue ga- in the
powerful 2 ypm a - the gastric
and intest gland are fatty degen
erated. Liver may be large or
small. according to the time the
disease has lasted.
Inflammatory lesions are more more
common with ac- but- have the
look of the large white kind of
non Bright.
Free phos must be detected
in an analysis- because. there is
n so much in the tissues of the
body. - but in all fluids and
tissue it is found-.
Autopsy. Have room dark.
and look for phos- - mouth and
throat then shake up the contents
of stomach and you will get
the luminosity which shows free
phosphorus.
It is oxidized very soon to phos
phorous. and then to phosphoric
acid

1

Odor luminosity and reduct teil which reduces $Ag\,NO_3$ to metallic Ag. There is also offshoot to phosphoretted hydrogen.

This luminosity is prevented by turpentine. NH_3 fumes. the latter is important as NH_3 in Coh. fr turner

Dun. is the way you do the analysis. as the vapor passes through the condenser. at the point where the vapors condense. there you get the luminosity. This is very delicate. 1 match will give the lumin- for 1/2 hour. in 500 cc of H_2O

As a rule abt 3/4 of the phos. passes over from the retort.

Treatment.

All fatty food must be stopped

Castor oil must not be used for the reason that phos. mixes in and is more easily. absorbed.

Turpentine old. (new of no good) which has been exposed to air and has ozone.

and is supposed to act by oxidation of the poison it should be given in large doses.

Medical Chem. April 13. 82.

Recitation

Mental symp. actions of the attendants & take a note of all ~~that are~~ who are present. What is compound poisoning? Where a poison has been given and a drug has been given to cover the symptoms. This is compound poisoning. Instance strychnia, then give morphia

Intoxication may hinder the absorp of a poison.

Morphia and strychnia are antagonistic

The chemist should be given a hint as to what the poison is. As it saves time and material this latter is a very important thing as the amt of material is always limited

He should make the ordinary preliminary test for the sub-

and by so doing he may get an important hint. But of more important thing to do is to make a microscopic examination of the intestinal tract to discover traces of the poison either. capsules or tablets. Digitalis has on it two kinds of hairs one pointed and the other not pointed and very bright. Few very few other leaves have this appearance. The color of the contents is important as giving a hint the order: in case of the volatile poisons. Fatty degeneration of liver & heart indicates phosphorus poisoning. Gangrene of the mucous membrane of the stomach may also cause the appearance in a less degree

Organs should be divided into more than two parts.

By a careful examination of the stomach you can tell what has been taken and also how long digestion has been going on.

and then get an idea of when the food was taken.

Organs should always be opened. by the ~~Phy~~ Medical examiner and not left for the chemist

Doctors should always be on the look out for pretended poisoning. they may assimulate the most of the symptoms but not all of them.

I. Lead with all my might which comes under the Irritants

Opium makes a class by itself the narcotics

Common have found a true action

I Take chap XI. XII.

~~Medford~~

Toxicology April 14. 1882

Wood wants to see me. Monday. in the Obsitory.

~~Arsenic~~

Toxicology. April. 14. 1882.

Arsenic poisoning. In getting the sublimate of as. heat the tube where you think the sub- is to form and you get large crystals.

Sources of as-poisoning are numerous (Arsenious oxide.) white as is the most common. A perfect pure ~~oxide is~~ sulphide is not poisonous for it is used in the (of alimentary canal) process- but by exposure to moisture a part is converted into the white (arsenious oxide) and is poison. Metallic as (pure) is not poisonous. tho by exposure undergoes a similar change to the above. and forms arsenious oxide. This metal mixed with white make the fly powder - (of the stores)

Arsenic oxide. (pentoxide) has not given any cases of poison - is readily taken up by moisture and becomes ~~[illegible]~~ converted into a moist mass.

White as = 2 kinds Transparent

and opaque. The opaque is more crystal
sol in H2O than the other is
Colors are very common source
of poison. Arsenite of copper
Schulz green Paris green. are
the some thing and are poisonous
Fowlers sol is a poisonous sol
Donovans sol is made
of as and alcohol H2S ni 2 sol.
As used in soft soap is a
common cause of poisoning and
is used as an anti parasitic
Arsenuretted hydrogen this is
formed in Marshes test for as
and is extremely poisonous.
Salts of arsenious are acids
are poisonous but they have give few cases
of poisoning
~~Arsenite of Mercury~~
Yellow sulphide as a color
has given rise to cases of
poisoning. Paints in children's
toys. Wood it has been used as
a coloring matter

Symp. after inges of white As.
and the sol of As vary very much
We may have 2 varieties of
acute. Acute = rapidity of symp
violence and rapid death.
This is not so common as the
2nd acute = death in two weeks.
In cases of acute symp appear
in 1 hour after ingestion of
poison which is almost always
white As. or Paris green. White
gives no taste except a sort
of burning sensation. Paris green gives
a coppery taste.
~~Pain~~ Sensation of heat great.
then great pain in the epigastrium.
a little later a dysenteric pain
in the rectum.
Vomiting and purging may come
on rapidly. Very great prostration
fainting cold extremities & death
in from 4 to 8 hours.
2) Now there is another kind of
poisoning where the purging

pain and vomiting may be absent but you have a great deal of narcotism and the patient dies in 6 – 8 hours. The common form is the sub acute symptoms come on in from 1 – 10 hours. These may be delayed by various causes and states of the system. Opium may delay the symp. intoxication. One case a man took 120 grains and sym did not come on for 3 days. death in 6.

When the sym do commence you have obst vomiting and purging and prostration and great abd pain then comes after a day or so a let up of these symptoms. Thirst weakness irregular heart cold extremities. painful deglutition (poss) –aion this last for 20 – 48 hours then comes a reaction and we have the result of inflam –ons Abd tender tympanitic skin

tenderness, sleeplessness, action of heart is affected face is swollen and cyanosed. sometime in 2—5th day you get an eruption due to action on the sweat glands. then effort to eliminate early you have jaundice (and after death you get fatty degen).

Intellect remains intact until a few hours before death. then convulsions and death. death in such - case in 2 days—2 weeks. Who may have both in the acute and sub acute bloody vomiting and blood stools.

Death may not take place until after all or has been diminished death being due to secondary conditions due to inflammation but this is rare.

Chronic form of poisoning

Usual, due to administration
of Fowler's sol. in too large
dose. This poison (As) is not
an accumulative ~~disease~~ but
is ~~rather~~ one which is eliminated
and in chronic cases it is taken
a little faster than eliminated.
~~Here~~ you get always the eruption
vomiting. Blood is thin and
watery and have hemorrhages
from nose uterus throat etc.
face looks prematurely old
hyperaesthesia of skin. trem
bling of the limbs (palsy)
death is from a ~~week~~ month to three
years.

Poisoning due to external
application. such as caustic
here we almost always have an
eruption at the point of applic
ation. Ordinarily in the ~~other~~
acute ~~or subacute~~ in an average
death comes in ~~from 2 days~~ 1 day
Shortest period is 20 minutes

Longest 2 years in acme of chroni.
2 in 3 grains of white are in an
fatal dose 1/8 of a grain has
produce serious results
2 grains given in ~~divided~~ da
ses ~~for~~ scattering through 5 days
has proved fatal.
(1/2 oz of Fowler = 2 grains of ac.)

We find in acute great inflam
of mucous mem of stomach &
intestine. In the chronic and
sub acute you see no sighn
of active inflamation the only
thing is a pale swelling of the
gastric glands ~~due~~ also due
to fatty deg. same in two of
glands in inter partic solitary
glands.
Fatty degeneration comes on.
in some cases. with remark
able rapidity. beginning in 3-4
hours. complete in 10. at times
Preservation of the tissues in-

a thing to be observed. as this is quite characteristic of oz. Prof Wood mentions a case where the body was preserved for 26 years. Purpuric spots may be found beneath the skin. There are no lesions of skin, mouth or esophagus. In the stomach you get ulceration at times, great redness and at times perforation but this is not common. This redness may cover the whole surface or may be confined to spots or may only affect the folds of the rugae.

Upon careful ex we can usually find traces of ox as little white or yellow patches. white if death has come quick yellow (sulphide of oz) if death has been delayed.

We find the same look in the upper part of small intestine and in the ~~section~~ rectum.

The solid ~~[illegible]~~ organs are affected heart kid liver. and

muscular tissue are as a rule fatty degen. As may remain in the tissues for a long time. Can also be found where it was given in 2-16 days. But when given in larger doses it is not so rapidly eliminated

In a case of chronic As poisoning extended 6½ weeks after the last dose.

Medical chem-recitation. April 20, 82

What are the common symptoms of irritant poisons. Coffee ground vomitus. blood-pain in stomach. In corrosive you often get perforation. How frequent are cases of H_2SO_4 poisoning.

Give symptoms of H_2SO_4 poisoning. Pain in abdomen: burning of tissues of oesophagus coffee ground vomitus. acid reaction. constipation ~~retention~~ suppression of urine. bladder empty or filled with bloody fluid

Dilute H_2SO_4 will lose H_2O when exposed to the air until you get a given sp gr and the red stain becomes brown What test is often mixed with H_2SO_4 One Indigo. Then is often mixed

with H_2SO_4 and its marked blue colour readily leads to its detection.
Dilute H_2SO_4 does not cause such violent symp and you do not get perforation so often and rarely have perforation
Toxic dose is 2 grams. Antidotes are chalk. lime. $MgCO_3$. Mg is preferable to the others. as it acts also as a cauterant and thus assists in its removal Give tests for H_2SO_4
Ba Cl. does not distinguish between free and combined. H_2SO_4.

Diff between H_2SO_4 & HNO_3.
Colour of vomitus. is yellow. pain more diff and it also attacks the air passages.
Spots on clothing are dark. yellow. as they are on the mucous mem: the yellow colour is due to formation of nitrate of albumen
Nitric acid also gives out an odour due to nitrous fumes H_2SO_4 is odourless
Tests for nitric acid. = $FeSO_4 + H_2SO_4$
Symptoms of HCl resemble those of Nitric most. as their solubility is abt the same. both affect the air passages
Detection is very hard

If free HCl is present you need not add nitric acid for a crystal of nitre will do. the same is true in the reverse. when you may add a grain of common salt. $AgCl$ is sol in NH_4OH. and oxalic hyposulphite. this test alone does not distinguish it for all of the hydrogen acids are left. (hydriodic. hydrobromic. hydrocyanic)

Pumpkin sources of oxalic forming salts of lemon. these may consist of two ingredients. Rumex oxalic may go under the term.

The crystals of oxalic acid and $MgSO_4$ cannot be distinguished. as for the test. goes. Oxalic does not chan.

Epsom salt sol in alcohol. insol in alcohol. sol in H_2O. Oxalic sol in H_2O sol in alcohol. In a tube you can by gentle heating sublime oxalic

Oxalic acid is very sour and on account of its extreme solubility it is almost impossible to give it correctly.

Syph. Burning pain in stomach vomiting

if patient lives several hours you get purging
symptoms. may be bloody or not but if
they vomit get blood. often observe
get a weak pulse. collapse and prostration
pulse when given in dilute form.
Shortest fatal period is 3 minutes.
Chalk is best in this case because it is much
less sol. than Mg. next is lime H_2O
If acid is strong you use wire the stom
ach pump if weak do otherwise
Coke. Begin with post mortem look
for acid and go to air passages

Toxicology. April. 26. 1882.

The elimination of As is usually complete in 3 weeks. One case is on record when found after 6 weeks.

The As is not distrib uniformly through the body. some tissue taking more. particu the liver which has more than any other tissue. here the max amt is greatest in about 15 hours. Providing that absorp commenced at once we may have an amt of As = to 6 grains of white As.

At this time fatty degeneration has commenced. The time at which it commences is important it may commence in 7 hours. In one case it was much advanced in ten hours. in one case it had started well in 7 hours.

Some claim that the greatest amt ~~has contained~~ is stored up in the brain and nervous tissue. But they performed the test by mar sh's test. And as some sulphur and organic matter

may. to deposited the weight of the
tube may be measured and hence
an anod. Lives and Kid have abt
the same amt in proportion to their
weight. The amt in the stomach
and intestines depends upon the
amt of absorption.

Treatment of acute arsenic
ing the great thing is to get rid of
the poisonous matter. Empty contents
of as may as have to wash out stom
ach. Use stomach pump if you
can get one if not, use emetics H2O
Mustard and water. Or any thing
which will dissolve the arsenic and cause
vomiting at same time. Freshly prep
ferric hydrate. is the ideal best antidote.
Magnesia of milk comp are
very injurious. because they are comp
and consequently insoluble. When the pump
is used stomach should be washed
for an hour or 2

Magnesia is the next best thing
In order to remove that which

has been thrown into the intestine give castor oil to carry it through quickly. In case which go on favorably, the urine should be tested daily for the presence of As.
Prop and tests for As. two forms trans and opaque. 1st in larger masses and is much more sol ~~and~~ in H_2O and is not commonly ~~2d~~ in the form which is oftenest met found in octahedral and 12 sided crystals. is ~~slightly~~ ~~slightly~~ sol in boiling H_2O 2 slightly in cold. Weight of As. A heaping tea teaspoonful weighs 150 grains. tablespoonful 520 grains
Sp gr of white As is much greater than that of H_2O. but it floats on water to a great extent. thus dis it from other powders.
And this should always be done at once at bedside as should the test for volatility as not many are volatile. put a little on a knife blade and it disappears

as does $HgCl$. $HgCl_2$ & ~~zinc~~ sal-ammoniac.

Molybdic acid is also used as well as the white oxide. Another very useful test which can be applied to all the compounds of As. Heat with a strong reducing agent (best sodic black flux). The latter than the potassic because the latter takes up H_2O, which rather hinders the test. This tube gives off an odor as garlic. and you get a deposit of white As. corresponding to the amt of As in the tube. This is very valuable in all legal cases.

Arsenite = yellow. arsenate

$CuSO_4$ + arsenious acid = light green arsenite of Cu. $CuSO_4$ + arsenic acid = blue green ~~arsenite of~~ cu arsenate. both the cu & As salts are used in Marsh as and NH_4OH

The sulphuretted hydrogen test is one of the most useful tests for it can be applied to powder as well as sol.

Common ac As_2O_3. may be converted into As_2O_5 by boiling with the ~~H_2O~~ NHO_3 or with free cl.

Formation of tripple arsenate of these crystals are similar to those of tripple phosphate. the atom of phosphorus being replaced by an atom of As. ($Mg\,NH_4\,PO_4$). ($Mg\,NH_4\,As\,O_4$)

~~Marshes and Reinches test are the two most important test of all.~~

~~Method~~ (Arsenic acid test for any form is oxidized with cl or HNO_3. and is acidulated with HCl and a sol of uranium added and the test is just the same as that for the phosphate. This is a test he meant to mention before) If you destroy the organic matter and pass ~~NH_4HO~~ ~~or~~ Sulphurated hydrogen you get a ppt even though you have not metals there this is due to organic sulphides.

No ~~color~~ dependence should be placed upon the. color of the ppt

deposited by passing H_2S.
With the rest of the white fused mass in water all the tests for arsenic acid may be obtained.
Gemdes test. acidulate the sol with HCl and boil the copper remove a pair of arsenic from the sol. and it is deposited on the copper
Wash and dry between filter paper and this gives a sublimate of copper. The best kind of a tube is one with a bulb and a glass neck.
Marshe test. Method of analyzing

Medical chem. April 7. 1882.

How do we know that phosphoretted hydrogen
absorbed [illegible] as is proved by passing through
a sol of nitrate of silver which is reduced
[illegible] as the [illegible] is not [illegible] you
know that there is no free phosphorus.
Turpentine should be given in
large doses for if given in small
doses it is absorbed and acts as a
poison but given in large doses
it passes rapidly through the [illegible]
[illegible] and [illegible] [illegible]
Large doses is [illegible] [illegible] [illegible]
[illegible]. If the P
treated with turpentine the phosphorescence
is obscured. [illegible] hydro-
gen also [illegible]
As and Sb. for the P. T. [illegible]

Toxicology. April 28. 1882

Test for As in wall paper. Marsh's test is the only reliable one for papers of all the colors and for cloths.

Cut the paper into small pieces moisten with Conc. H_2SO_4 and char on a H_2O bath be sure that they are all moistened with H_2SO_4.

2d (Moisten with NH_3, and you get an azure blue due to copper then add a drop of $AgNO_3$ and you get a canary yellow. due to arsenite of silver sol. in excess of NH_3 and the mineral acids)

Moisten the charred paper with H_2O & filter or rather wash with water and filter. In performing Marsh's test care must be taken to add neither to much or to little. & always test your reagents in doing this test as the ordinary Zn & H_2SO_4 is apt to contain As. And this is done by testing the flame with a porcelain plate before the mixture has been added. In criminal cases

you should also heat the delivery tube for 15 minutes to be sure that no mirror is formed in the tube. Haematuria is a common symp. associated with arseniuretted hydrogen poisoning. and you also have nausea. In a moist atmosphere the air in wall paper evolves a little sulphuretted hydrogen. then is inhaled due to the dust derived from the paper. But when the paper is of a bright color you can sometimes get a green dust above the doors and windows where dusting is not common. here we get two sources. gas and dust. And the fact that dust is in the air has been proved by filling tubes with ~~cotton~~ or cotton and passing a current of air through bringing it into contact nitrate of silver and from this it has been obtained.

After the gas has been tested then introduce the sol. and wait for a minute or two.

Sources of chronic poisoning most common is wall paper. Paris green

all of the arsenic pigments are apt to contain As.

Shield green arsenite of copper has 60% of copper and is the oldest known & most common source of poisoning. At present & works are known of poisoning and as they are applied to toys they give rise to many cases of poisoning.

Another source is the use in the arts as dye stuffs for instance, which is very common. Coloring of clothing is also apt to contain As and gives rise to many cases of poisoning. If fabric has worn it must destroy the organic matter with HCl. filter & Cl. filter and wash and extract with H_2O and notice does not fade.

Intoxicants flowers give rise to many cases of poisoning - paints green and red.

Water colors paints pale light green have as the dark green is more poison although not due to the Candy is often colored with As

of

portion the red. and green Paris green is colored with Paris green
Chrome yellow is ~~colored~~ used as a coloring matter
Aniline pig used in confec are some times poisonous.

Wine claret is often colored with a pig containing As.

Arsenical syrups raspberry blackberry Jelly Jams

Fuchsin in wine is detected very easily as follows add to 50 cc of wine + 10 cc of sub acetate of Pb warm and filter 10 cc + 10 drops of HCl + 10 cc of amyl alcohol and shake. and after the two separate the alcohol is colorless if pure but if not it is rose or cherry red if it contains rosaniline alcohol will be yellow. If colored with Archil get violet or red

To test color put some in a test tube + a little NH_3 and if it becomes colorless it must be fuchsin

Wall paper We cannot say from the look of a paper whether it will do or not. We may even have the same pattern and color we have at other not. Pale shell green = Chrome yellow + prussian blue

Paper used for wrapping candy often has a large amt of As,

Stained papers with have an immense amt of As in them and are very dangerous and are used by gang children to toys. Playing cards often have a large amt of As

Toxicology. May 5. 1882.

Symptoms of chronic poisoning. Most of these symptoms are due to the dust set free from the paper. which comes in contact with the mucous membrane of the throat and lungs. There is catarrh. cough and the patient has apparently a bad cold. There is also conjunctivitis. And as a small part is swallowed we get dyspepsia and if the poison gets into the intestine, we get a little diarrhoea Later we have symptoms due to the action of the arsenic on the nervous system and we get what is known as. nervous prostration. And all the symptoms of these obscure diseases may be caused by arsenic. (Corpses often have a Cupreous smell.)

Women are much more frequently affected than the men because they are in the common mine - Undoubtedly heredity has much to do with this. Death is often caused by. three forms of poisoning

Epileptic convulsions may be caused by the fumes of an. tobacco.
Antimony poisoning

Symptoms are two. Tartar emetic & the Tri chloride. The pure metal and the sulphides are not poison.

Tartar emetic is a double tartrate of antimony and potassium. K S b O T.

This has abt 44% of antimony.

They have caused many deaths both from chronic and acute poisoning

When taken in large doses it acts as a violent emetic and then you get rid of it

1 Tone of antimony has 32 gr to pint of sherry wine. Ointment 120 gr to the ounce.

When a large dose is taken. you get an acrid tast. (which as has not. but as a whole it resembles poisoning). Then vomiting and purging which may be absent. Eye mouth and throat and the mucous surfaces are covered with an opthone crust.

Salivation is also seen (as it is sometimes in ac.) Vomiting often bloody as are the stools, cramps in the abdomen, sometimes spasms. The symp strongly resemble those of acute dysentary.

Antimony in fatal cases progresses rapidly and fatally toward death. If how the dose is small it goes on until recovery commences which is also regular and progressive. In as there are intermissions and let ups which differ from the symp of ~~ac~~ antimony which is progressive and regular.

~~How ever~~ The Irritation is in proportion to the amt given. In cases of chronic poisoning there is an increase in the amt of urine, and the urine has large amts. In as the urine is diminished. Intestinal symp resemble those of chronic dysentary. External application of antimony

partic the chloride which is found in most cancer paster causes cases of poisoning. When these applied you often get a pustular eruption on the surface of the body.
Post mortem. examination.
Of those cases. fatty degeneration. inflammatory process which may be confined to duodenum, cecum ~~rectum and illeum~~ ileum. the greater part of the small intestine being stripped. Fatal dose is hard to determine. 1/16 of a grain have given. severe. symps. But this is exceptional. The smallest fatal dose was 3/4 gr in child 2 gr. for an adult; death ordinarily takes place in from 2 – 6 days.
Treatment. Is to form the vomiting. Give tannic or gallic acid these are always at hand and are very valuable remedies. Gallic completely precipitates the antimony forming the a gallate

This ~~drug~~ (tartar emetic) is very sol
in water
KSbOT is ppt from sol by nitric acid
care must be taken not to add too much
acid as it is sol in excess of nitric
a. in an excess of HT. this last distin
guishes it from the similar Bi compound
By this pptation the oxy salt is formed
Reinsch test gives a blacker deposit
on the copper in Sb than in As and the
sublimate is nearer the flame and the
crystals are vesiculate rather than octahedral
Marsh test is of great value.
And if the delivery tube is heated the
Sb is deposited on both sides.
And if heated in a slow current
of H_2S you get a yellow sulphide
of As and an orange sulphide of
Sb. If it is passed through
sol of $AgNO_3$ in As you get ppt of
pure Ag. in case of Sb you get a
mixture of Sb Ag.
As sol in soda hypochlorite. Sb in
ammonium sulphide

- In cases of Sb poisoning all the urine which can be obtained should be. For often you can detect the Sb by concentrating and preforming Reinsches test.
Sb can often be detected in the body long after death. And it preserves the tissue.
The case of poison from the tin chloride are very few and its action is that of a corrosive and in the cases which have been seen the intestines have been very much injured

Medical. Chem. Toxicology. May 11. 82

What is the treatment in a case of acute As. poison. ? Ans. Give emetics and then give a sol of fresh ferric hydrate. which is made by ppt ferric Cl. with NH_4HO. and washing the filtrate thoroughly. until all NH_4HO is removed. because any free NH_3 will form arsenite of NH_3 which is very sol. and is easily absorbed. a dose of:

My with the ~ still better.
How test white As powder. ?
Ans. It floats on water. and is a heavy white powder - volatilizes on heating. and gives off white fumes. which may be condensed on a slide. Good a black test in the lower part of the flame.
Sulphuretted hydrogen added to the sol gives a yellow color, Ammonia test and the reduction tests with ~~sodai carbonate~~. Blood. Flux which is made by igniting sodic carbonate.
Sequels. tests are those with Agnitate and with Sulphate of copper. and with uranium. the last is used to get the Uranotivo test. the preparation of which are. the same as the test for phosphates.
In the analysis the phosphoric acid is separated by the sulphuretted hydrogen and. then. all parts of the reagent being due to phosphoric acid is removed
Means of distinguishing As and Sb. by marsh test? ~~Diff~~ in Ans. Diff in color and solubility. and. in volatility

In the mirror with nitric acid and evap. and test with nitrate of Ag - brown if as. grey in Sb.

H₂S test a green. powder quickly f. As P. Ans Heat is reduction test.

$NH_3HO + AgNO_3$ This is done by adding the NH_3 to the powder get a blue due to Cu - then add the Ag. and you get an arsenite of Ag which is a canary color.

In testing paper you moisten the paper with the H_2SO_4 and char. filter and add to acid in the H. generator.

All the tests mentioned on the paper are watch glass tests. only a grain of the poison being used with one drop of the reagent.

What are the principal sources of $KSbOT$ poison? Ans the tartar emetic and the trichloride and the prep. wine of antimony. and the ointment of antimony.

$SbCl$ is very much more sol than As. And the taste is acrid and the crystals are tetrahedral

and large. then joints distinguish it from an. What are the symptoms of St. fever?

What is the progress in St.?

In Chronic poisoning the symptoms resemble those of chronic dysentery. Then which it is distinguished only by the examination of the urine. That is the only way to distinguish it from dysentery. The amt of the urine is increased in chronic due to stimulation of the kidney.

What are the post mortem appearances?

One. There is inflam of the digestive tracts both exception of small intestine which is mostly skipped. Fatty degen is also seen parts in the liver

What would you expect in case of chronic poison? Ans. Fatty degen and ulceration

Where men of an passages is more apt to be inflamed in autumn than in any.

What do we see when St. has

been. applied externaly. and it is also seen at time when taken internaly. What is the antidote? Ans. Any sol containing gallic and tannic acid.
Gallic acid can only be used as a reagent ~~when~~ for quantitative work when the Sb is in form of trichloride.
What are some of the ready test for A.Sb.O.T.? Ans. Reinsches test Marshes test. Bedside test is sol ubility. taste charring and gives odor of sugar. dipped into flame get. mix of purple and blue. what are color of Sb. and K. Sulphuretted hydrogen to powder = orange color. added to sol. plus HCl also gives orange. color.
Orange sulphide of Sb is sol in HCl acid. in this sol. if dropped into H_2O get a white ppt of oxy. chloride. sol in HCl and HNO_3
Take next two chapters. Hg. cw.

Toxicology. May. 12. 1882

Hg.

Hg and all its comp which are sol in gastric juice are poison. The principal ones are. $HgCl_2$. Hg_2Cl_2 & Hg..

Calomel pot gives rise to the most cases of poisoning because it is impure and has some of the bichlo. Cl. in it contains some. which is sol in the gastric juices.

If you treat Hg_2Cl_2 with $HCl + H_2O$ and you get no mercury - but if you add to it. gastric juice you'll get it. Hence never give calomel during digestion

Hg is the principal source of chronic poisoning due to the fact that Hg is vol at any temp above 40 deg F. And in the mines and laboratories where it is used you get many cases.

$HgCl_2$ gives many cases of poisoning from its extensive use for anti parasitic.. And in the taking sol. which were intended as external items. All the sol forms of Hg may be absorbed from any

2 surface. Hg is absorbed through the skin as easily and is not changed ~~of~~ in. And has been found in each.
Symp of $HgCl_2$ are local and general. The local are corrosive almost as much as acids and alk.
Inflam of the whole alimentary canal. Mouth and oesophagus are often covered with a white coat due to an albuminate of Hg after exposure to air for any time however short.
Vomiting is rapid first contents of stomach then becomes often bloody more so than As or Sb due to the greater corrosive action. The diarrhea is more apt to be bloody than Sb but has not intense vomiting as As. Depletion are frequent and bloody urine is almost suppressed and very scanty and has been noted cases symp of acute nephritis. This is due to effect of Hg

to eliminate the poison. Breath is fetid and has peculiar odor and in rare cases we get salivation but not commonly. Usually toward end, patient seems a little better but the heart grows slower and weaker, respiration diff. and death in from a few hours to a day or two.
Nervous sym. Loss of sensation in lower part of body, upper part is normal. Eye disturbance is also common much resembling encephal- but last only 4 days.
Chronic poisoning commonly called professional poisoning from the frequency which with which mercury workers are affected.
This may be caused by frequent doses of Hg. in medicines. The first symp. is that the gums are a little swollen and tender; this tenderness is perceived by bringing the gums together. Next is the diarrhea. If the ~~retention~~ of Hg

has been given a long time we get a simple line due to the decomp of food in these places forming H_2S which unites with Hg and gives sulphide of Hg. Same things cause the ring in lead and copper poison

In long cases jaw and cheek may become ulcerated, and these may be mistaken for syphilitic pains in the bones also comes which closely resemble those of syphilis. Patient is pale and anemic from action of Hg on the blood Trembling and Epileptic convulsions

Tenderness of gums, pallor weakness and diarrhea are the warning symptoms. The production of salivation varies much with the individual affected time of its appearance varies much, has been known to come in three .. It may happen after having ceased, no Hg being given in the mean time of

Salivation may be produced by many sub. digestives. As. I.L. Iodide of K False teeth, B. compound. and all irritating compounds applied to mouth will produce this.

Mercurial palsy and salivation are very rarely seen together.

Symptoms of Hg applied external are abt the same. Salivation and eruption are more common.

Post Mortem. Evidences of inflam. and irritation, the white coat. which goes down as far as a part of small intestine. When exposed to air - stomach looks black. The tongue is swollen and the papillae much enlarge. Kidneys are acutely inflamed. (Acute parenchy nep) In chronic you have (Chronic Interstitial). Fatal dose. 3 gr of corrosive sub. in the fatal dose on an average. time 1-5 days. In chronic duration of life is uncertain

Treatment for corrosive sublimate
Give all the albumen as this is the best antidote forming an almost insol albuminate of Hg. Eggs. milk are the two best. Flour may be used. the starch may be removed by washing the flour with water and straining through a cloth. But it may be used. ~~pure~~. mixed
Use of stomach pump is doubtful. Fe or syrup or Chromic Chloride of potassium should be used. Test volatility. This is true unless in combination with fixed acid. There is no charring. H_2S gives black color with $HgCl_2$ or $HgCl$
$HgCl_2$ if warmed in a tube gives long reticulate crystals. If a little soda be mixed with the comp and you get a sublimate of met Hg. which may be condensed into a large one by rubbing together with a glass rod or tube.

Toxicology May 18. 1892.

What are the principal causes of Poisoning. Commit suicide Murder the cause of acute poisons. Hg. and calomel the cause of chronic.

What employments give cause of chronic poison. What is the best preventive against Hg poisoning in factories. Can sprinkle the floor with NH4Cl This has been found to do a good deal to prevent this.

$Hg Cl_2$ = HC. $Hg_2 Cl_2$ is..

$Hg_2 Cl_2$ is a heavy crystalline sub very sol in H_2S. alcohol. ether and ~~chloroform~~ Calomel is often contaminated with corrosive sub. How are $Hg_2 Cl_2$ and $HgCl_2$ made?.

What are the symptoms of a Corrosive of $HgCl_2$.. Are White smoky. Sour Blood. coming violent and ~~bloody~~ bloody. mucous taste. white coat. What is it to get blood because it is nine Corrosive

Can we have acute poisoning from the external application of the poison

2. Lead. and ~~silver~~. cu. give a line around the gums, as do all mineral poisons which give a black sulphide. Pb & Hg give blue line. Cu more of a purple.
What is the time of death. Ans. usually in twenty four days.
What is the antidote. Ans. alb matter. eggs. milk. flour. These form an ~~[illegible]~~ albt of Hg. which is sol in an excess of the alb so to much should not be given
P.M. appearance. Mouth and oesophagus have a white color due to alb of Hg. turns brown on exposure to air. Stomach and all parts of the tract touched by the poison. Perforation some times takes place. Kidney. is acute gives acute parenchymatous nephritis. Chronic. produces chronic and interstitial
What are the symp. of chronic poison? Ans tenderness of gums.

and teeth, diarrhea - one of the first symp. What is salivation? An increased ~~salivation~~ secretion of saliva. These may come on quite rapidly. quickest time on record is 1½ hrs. is the quickest time on record. Some persons are much more easily salivated than ~~adults~~ others. children are not so easily ~~effected~~ salivated but are easily effected by the poison.

How detect Hg. comp by ready tests? Crystalline form in case of $HgCl_2$. Calomel - amorphous. $HgCl_2$ fuses and get white fumes. and condense on a piece of ~~warm glass~~ cold glass. and are needle shape.

~~A. I. green precipitate yellow~~

2 Hooll. ~~[illegible]~~ ~~[illegible]~~

Sulphide of Hg in sol only. aqua regia

~~[illegible]~~ Ph. Cu next time

Toxicology May. 19. 1882.

Hg is usually gotten rid of in a week or so. When a person has been treated by inunction it may be found for a long time a year or so.

Hg has been found in the lungs due to inhalation of Hg fumes.

Lead poisoning

This is often met with particularly in the chronic form. Most frequent form is the flowing of water through lead pipes. Soft H_2O attacks a lead pipe much more than hard water. If water containing an excess of alk carbonate, attack it much more vigorously. Oxygen dissolved in the water unites with lead to form ox of Pb or common litharge. This meets the oxy carbonate of lead, which is not very soluble. If the H_2O which has stood over night is drawn off there is little danger of Pb poisoning.

Acids in preserved fruits attack the lead in the tin in solder and get it poisoning in this way.
It is called tin foil usually contains a large amount of lead. some specimens have as much as 90 %.
Painters are very liable to lead poisoning due to use of white lead (carbonate of lead) Plumbers type setters are prone to the lead in lead and. is absorbed as such. and it may not appear in the urine until after treatment Inhalation of lead dust in the mines causes many cases of poisoning
Greens & colors are very liable to this trouble
Red and yellow oils are used often as a pigment and thus cause poisoning
Use of lead in enamel of cooking utensils causes many cases of poisoning.

Ordinary porcelain lined cisterns may leak lead: in composition
Cleaning bottle with shot is apt to cause poison. due to formation of a slight coat of $PbCO_3$ on the walls of the bottle
Cleaning champagne bottles with shot a fair shot cleaning in the bottom of the bottle. and then gives rise to poisoning
Ordinary red wafers sometimes contain lead.
Glazing of bread and confectionery with chromate yellow often causes acute poisoning due a much to chromic acid as to lead.
Many hair dyes have a large amt of Pb.
Acute poison is caused usually by injection of sugar of lead.
Use of matches in lighting a pipe with the ordinary matches which are colored with red lead. In acute poison.

We get first symp of an ordin ary - irritant poison - and a sweet tast, colic and consti pation. this last is characteristic of lead as is tast
Colicy is sever - and is epigastrium and is relieved by deep - pressure a abdomen to any other irritant pressure increases - it
Lead is a stupefacient and the stupor comes on either late and lasts of 2 - 3 days before death. Recovery - from Pb. is very rare - and is succeeded by an acute febril attack and recovery is slow -
Chronic poisoning
Mal - nutrition - pale anemic
More is very yellowish hue to the skin. blue line at junct of teeth and gums
Emaciation takes place - and after a time ac - - - - ding to strength of patient
- - cc, paralysis arthralgia

Colic pain relieved by pressure and
abdomen retracted so you can see
shape of spinal column. and is
thought to be neuralgia of intes-
tinal plexus and associated with cons-
tipation and pulse 30 or 40. Relieved by
Arthralgia always found near the
joint and resembles rheumatism
and is distinguished by the
fact there is no inflammation. and
is found mostly in cases of [illegible]
Next comes the paralysis which
affect preferably the upper extrem-
and affect first the extensors
and the wrist drops. and is
most common in the hand most
used. This may come on very
rapidly though as a rule a
long time to happen.
Cerebral trouble is next
Epileptic convulsions comm-
ence pass to [illegible] stage and
face [illegible]. Violent head
ache ~~and~~. No danger comes

from sleeping in a fresh painted room are from lead or concerned but the colics are due to turpentine and the volatile oils.

In cases of chronic poison of long standing we see [illegible] Bright.

Treatment in acute the best antidote is epsom salt. this forms the insol. salt ~~and~~ sulphate and acts as an ~~emetic~~ cathartic.

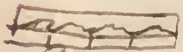
If any other sulphate is used it should be followed by a cathartic because the sulphate after a time is attacked by the intestinal juices. Lead in case of chronic poison is in the form of an albuminate of Pb. This is dissolved by KI - to a slight extent hence the value of this drug. [If] it dissolved all at once we should get acute poisoning.

If the KI produces colic you must give it very slowly.

not able to stand it still
use hot sulphur baths and
after a time the patient will
be able to stand by it.
6th Electricity is good for the paralysis
Peculiar pain of lead colic is
distinctive. it locates in epigas-
trium and diminishes on pressure.
We do not find many P.M.
symp. sometimes a whole lot
of flesh. Cases of death have
taken place sometimes before.
If lead has much acetic acid in
it comp. you may get symp.
of irritation

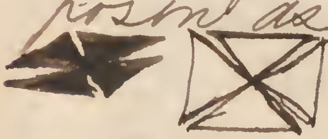
Tox. recitation May 25. 1882

What are the symp of acute copper poison? What is the color of the stools. How distin- between chronic copper and lead poisoning. Pb is constipated Cu loose. Pain in epigastrium is relieved in Pb by pressure in Cu is not. Pb is circumscribed, Cu diffuse. Pb. abd is contracted. Cu swollen and tense.


What is the action of H_2O on Cu

Sulphuretted hydrogen produces the black sulphide of Cu and is sol in dilute. ~~nitric acid~~ [illegible]

Cu is not a constit of the animal economy. only to a very limited extent. It is an accumulative poison as much as as lead.



What kind of food are most apt to remove lead-? Ans. any kind fr. acid fruit. and many of the vegetable [illegible] substances. many of the alk-veg.

also remove the lead: acid drinks. cider. beer. sherry wine

Mix of acetate of lead and yel plum. make the most of the last days and only use one to three of the cardiac syrup.

~~Materia~~

Of Toxicology. Dec. June 1st 82.

-$Hg Cl_2$.
-$Hg_2 Cl_2$ duelgrish between the two
-Cu.
-As
-Sb
Paris green. Paris green contain both as. and Cu.
Strychnine must be found in
Morphine

Either strychnine or morphine will be mixed with one of the metals. There will be only one metal in the mix unless you have paris green. Then you will have two metals

Oxalic acid.

+ Ch.

Acetate of Cu

Zinc also an strong mutant.
Zn-Cl acts also as an mutant and has also a convsive action

Cases of Bi poisoning are on record they resemble an epilepsy strongly and they were due to impurity in the Bi and in fact all these Bi comp have as due to the fact that the Bi oxide, is also an arsenical one. Prof Hood says that he never examined a specimen of Bi without detecting the presence of As. Tellurium is often in comp with Bi and violent a strong odor of garlic to the breath which is very diag.
Lib nitrate and sub carb combined © an acid may produce symp of mutant poison.

Cromium, thus given symp of an mutant.
When insol chromate is taken the HCl of the gastric juice forms a sol. chrom. and you get symp of poison.

Candy, colored with chamois-yellow.
Coloring of yarns; yellow dye em-
ployed in hams – these given cases
and were prohib by European countries
Coloring clothing with this has given
rise to cases of poisoning
Digitalis and hellebore are both cumulative
poisons.
Poisoning by Carbolic acid. this is a
decidedly a corrosive poison.
The urine becomes dark and smoky.
and a diminution of alk sulphates
Then we have gastric symp, slight
fever. in severe cases we finally get
cerebral symp and convulsions
People infected with any septic
disease are more apt to be affected
particularly young persons. When introduced
sub cut. or by spray produce it quite
rapidly.
Test for Carbolic
1st purple color – due to sol + Fe_2Cl_6.
2d Sol + NH_4HO – calcic hypochlorite or
ordinary calcic chlorate.

Dark color of urine is not in proportion to amt taken but the amt may be approximately estimated by a drop of Sulphuric. The amt Carbolic absorbed

Morphine	$C_{17}H_{19}NO_3$ (6-15%)
Codeine	$C_{18}H_{21}NO_3$ (6-½% print impurity)
Thebaine	$C_{19}H_{21}NO_3$
Peporeine	$620H_{21}NO_4$
Narcotine.	$C_{22}H_{23}NO_7$ (6-8%)
Narceine	$C_{23}H_{29}NO_9$
Meconine	$C_{10}H_{10}O_8$
Opianine	$C_{21}H_{21}NO_7$
Meconic acid	$H_3C_7HO_7$ (6-8%)

Sonfri	Commerce	Toxicologic
Narceine	Thebaine	Thebaine 1
Morphine	Peporeine	Codeine 2
Codeine	Narcotine	peporeine 3
	Codeine	Narceine 4
	Morphine	Narcotine 6
	Narceine	Morphine 5

There are given in the order of their power - the diff comes

For June 2. 1882.

Blue color with Fe_2Cl_6

Throdeu reagent

may Blue with HNO_3

In a legal case do both tests with Fe_2Cl_6 and in the same sol you can do the HNO_3 test and get the deep orange.

Throdeu reagent gives the most delicate tests for morphine

Morphine heated with H_2SO_4 then add crystal of KNO_3 and get a flame of color.

Principal test for meconic acid is the ferric Cl test. = Blood red. color which is not bleached by corrosive sub or HCl.

Action of lead. Apply to meconic acid for organic mg

Sublimation test for morphine is very delicate. take a piece of Cu. put on the one morphine. then put on a Cu. washer and over the top put a glass slide and you get the

crystals deposited on glass slide. This test is good for strychnine. This test is only applicable to pure alk. not to the sulphates

H_2SO_4. and $K_2Cr_2O_7$. test are the numerous tests for strychnine

A very large amt of Morphia will disguise this test, as will a large amt of KSto+

Strychnine is sol in 7000 parts cold 2500 of hot. This is the most bitter sub known. 1 gr in 70000 parts of H_2O gives a very bitter taste

Comp sol of I is a very good pptting reagent for the various kinds of alk.

First thing you do in a case of suspected alk. poisoning with convulsions and see if you get the bitter taste morphia does not give convulsions in adults but does in children.

Strychnine should give no color with ~~H_2S~~ HNO_3 - if brucia is present you get a slight coloration.

If you have strychnine mixed with tartar emetic. you will have to separate the strychnine by washing a little of the powder with chloroform. and let the fluid evap. and then do the tests with the residue.

If Morphia & poison are in the same way. alcohol. alcohol also takes up oxalic acid and $HgCl_2$. but these do not interfere with the tests for either morphia and strychnine.

The chemistry of the alk is very diff due to large amt of organic matter. and the quant used is so small that you do not find any unless in the stomach.

In Drag. the Alcohol H_2SO_4 remove all the alk and sol organic matter.

Opium poisoning

This is very common. due to ease with which it is obtained. Prussic strychnine As, $HgCl_2$ - are the only 4 poisons sol which are recognized a poison by U S laws.

Laudanum. resembles much tinct of [illegible]
Powdered opium given for cases.
Laudanum acet. sol of morphia are two principle sources of poison.
79
Paregoric is a frequent source in children.
Action of opium is a compound one.
Sleep is produced by only 3. (see list given two pages back.)
Narceine is more poisonous than morphia and does not relieve pain
Wine of opium if old has not much action. Various prep of opium may be absorbed from any surface.
If opium is absorbed slowly we get a stimulant effect. if rapidly none.

Tox. June 8. 1882.

Opium,

In poisonous doses - the action of morph. and opium is similar.

Acute. Due to rapid absorp. of large doses. almost immediate. comes on in course of 1 h. to 30 min. get death in these cases pupils dilated. Rarely get convulsions. this form is rare

Common form. Symptoms come on in 1 h. have 1st stimulant action. if absorp. is delayed. increased pulse. excitable dry skin and throat nausea vomiting itching. may be eruption if given on an empty stomach all the stage may be wanting. 2d stage anesthesia. deep sleep. relax. of muscles. pupils much contracted. not react to light

Comp. in sensibility. lasts for several hours. 6-8. 3d Coma. deep stertorous respiration. pupils dilated. takes place just before death. death in from 5 - 15 hrs.

In children often get convulsions more in adults.

Lower - animal zeal to move fr. the convulsions.
Recovery - common in increasing and Trig kinds of opium true sweating during the first stage. Sudden (of same) during the 2d.
Chronic (opium habit)
There is nothing marked abt the stage, only that a person get into a habit. so that an immense amt may be taken in some case. 9℥ have been taken per day.
This usually results in suicide.
This habit is often induced by mothers giving this to children. They rarely live to be more than two years old.
On the average death takes place in 12-15 hrs. in opium poisoning if he has lived over 12 hrs and has recovered from stupor, prognosis is favorable.
Fatal dose in adult has been 1 gr of Mo. 4 of O. 1 dr of Laud.
Children and old people are very susceptible

People suffering from B without dropping are very easily affected. All cases where is much pain large doses may be taken. P.M. congestion of brain and some apoplectic hemorrhage.
Apoplexy and intoxication are the appearances most often taken for opium. You can get either the odor of ~~[illegible]~~ ~~[illegible]~~ camphorated tinct. Pupils are diff in apoplexy and only one side paralyzed. In opium both. In opium and alcohol you can nearly partly arouse the patient. In apoplexy you cannot do so.
Stomach pump is the best thing emetics no good because the stomach is paralyzed. Pain and an electric battery no good consider. atropia and belladonna are good to counteract the action. Action of atropia lasts for 24. opium for 12. and if you give too much.

alropia you may get death from this After extracting with acid and alcohol - shake with benzine and get meconic. then add alcohol - and the morphia may be taken from the alcohol - by shaking with H_2SO_4 ~~and~~ few drops of H_2SO_4 and it[illegible]

~~Morph~~ Morphine resists decay for a very long time. and has been detected ~~for~~ a after 10 mo. Strychnia lasts for the same time cases of several years.

Strychnine cannot be detected if death takes place so quick that it has not been eliminated

Strychnine.

Strychnine or nux vomica are the principle source of this poison.

Symp usually come on from 10 - 20 min due to great sol of strychnia in the gastric juice 1st feeling of anxiety and terror and anguish and by some attack ~~just~~ the patient is thrown into convulsion so severe that the patient may rest upon

head and heels.. the face is cyan otic due to interference with resp. the cornea a cut up and the face may become pale. intermission last for 5-15 min. and then another convulsion. which of the case. is to be fatal is longer than 1st. The given a and i as a adult death taken place in the 4 or 5 convulsion. if death is a convulsion it is due to obstructed res if during interval due to exhaustion. death usual taken place -- abt one hr.. Longest time a record in 6½ hrs. All salt which produce a slightly sol com hinder the absorp and the symp. all tannic acid comp for tannate of strychnine sparingly sol.. dimeds.
½ gr. has produced death in 25 min
1/16 gr. has killed children.
Treatment is. to remove strychnine and the way to do it is to chloroform the patient.
Ether and Chloroform is one the remedies

Jx June 7 1882.

Tannic acid is good to give in cases of strychnine. then give chloroform chloral also give relief. and should be injected subcut

Emptiness of body in rapid death takes place during convulsions

Fingers and toes are very strongly flexed. The post mortem rigidity is very marked and last a very long time All organs are congested veins are full plasma in after part of cord and brain and may be apoplectic hemorrhages if the autopsy is made soon after death The heart is empty and contracted. digestive organs show nothing

In Children death may come before the 4th or 5 convulsion and in tetanus with only one.

Epilepsy. See previous history taken this account. We have only one convulsion at a time. Intellect is lost during the fit

In strychnine the mind is clear.
Tetanus then varies from strychnine by the duration and progress.
In tetanus first the jaw is affected in strychnine it is not first and in tet the convulsions are much longer and death is from 6-10 days.
Puerperal convulsions have the patient in-absol unconscious and the intervals may be long or short and as a rule the patient does not talk intelligently during the intermission death rarely takes place before but of children in Strychnine it does - the bitter taste also is noticed.
In puerperal convul - the symp of nephritis is usualy present and the urine is passed mixed and the convulsions are longer.
Strychnine occurs in the crystaline form. acombre is rapidly crystalized needle of slow

Alk in 2000 parts of cold. 2500 of boiling H_2O taste a most bitter but known readily sol in acids and alkalies by alk. The salts are very sol in H_2O

1 drop of sol is very bitter.

1 part of strych given a very bitter taste with 60,000 of H_2O, and can be tasted in 420,000

Insol in ether slightly sol in chloroform slightly sol in amyl alcohol

H_2SO_4 + $K_4Cy_2O_7$. detects $\frac{1}{100001}$ gr

Best test — the fuming test

Brucine. not as bitter as strychnine and acts similarly. but is not as strong

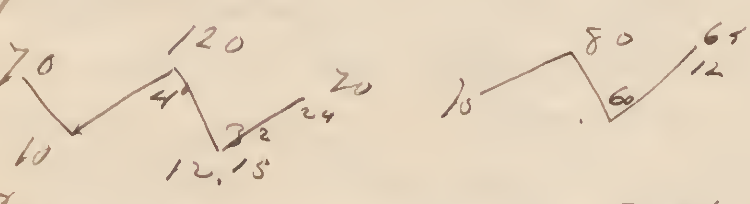
Can may be changed into brucine by reducing agents — Brucine to strychnine by oxidation

Brucine + conc. HNO_3 + well in gives an orange colored zone at junction of the parts and acid (test for nitric)

Shaken with benzol removes strych again and allowed to evap. and you get a pretty clear crop of strychnine

Belladonna datura stram. hyoscyamus niger. Most cases are accidental due to taking sol intended for external use. Ald are atrophine and hyoscyamine. these alk are common to all three. All parts of plant are poison. Sym are upon the dry throat and dilated pupil. If given several days in mod dose it acts as an accumulative poison. after a time get dizziness and nausea. locomotion is not normal patient walk as though drunk. have a skin eruption similar to scarlet fever. bladder and rectum are paralyzed. This is important for the poison may be accumulated in these places. And be reabsorbed. The urine is not diminished but if anything a little increased. Sometimes get convulsions. after a time have a gay and lively delirium. finally stupor coma - convulsions and death after a few days although it may come after a few hours

urinary, common, and is often [illegible] in G. fever. often 24 hrs. for con.
Give a favorable prognosis, because this is the limit of its action.
60 gr of [illegible] = 1 gr of strychnine
Remedy of bell are blue and give strong blue colour.
3 60 gr of ext = 1 gr.
1/10 gr is fatal dose. Sub cut .03 - .005
m grm have proved fatal
Stomach pump, emetics, purges are all of value. Tannin delays the absorption and is only of use to delay its effect. cold application to head and spine.
Morphia has been used to counteract the effects, and is quite good.



Color is increased in strychnine. [illegible]
[illegible] and if color [illegible] livid
both drugs given. Str. [illegible] = sleep
At = no sleep

Tox June 12 1882.

Morphine does not act well after a large dose of apomorphine, and indeed is worse than nothing. Atropine after large dose of Morphia acts by contracting the blood vessels and preventing cerebral congestion. P.M. are not characteristic in atropine or belladonnine. We sometimes get congestion, and if the berries of bell have been taken get a blue color.

Best test for atropine is the physiological test. Sol in alcohol and the acids.

Dilation of pupil comes on in 10–20 min if taken into stomach, 5–10 subcut, 2–3 under eyelid. Chemical tests are not of much account.

Stramonium seed are the same shape but larger and blacker than hyoscyamus or belladonna. Atropine is quite resistant.

Each of these drugs have two alk. Bell. has one the light and the heavy.

Indian poke – veratrum viride

There are very common sources of poison

-ing from reducing its action. vomiting purging
20 ff
from a heart, pulse 30.
Vomiting — obt. almost immediate in
stomach and inter congestion. and in
the elimination by the kid. hyperaemia in
caused. And as it may be detected
in the urine it should be saved
except in the case of morphia which
cannot be.
Counter irritation and stimulants to
keep up action of the heart.
Benzole, amyl-alcohol - chloroform. all
remove this from an acid solution
A little piece of this in H_2SO_4 = first a
yellow finally a red.
piece + HCl + heat = amethystine blue.
Alk. sugar + HCl = 1st green then purple and
finally blue. Physiol. test = slowing of heart —
Sol. in dil. acids and ppt. by Mayer's reagent
Digitalis
Acute and chronic, the latter is due
to the cumulative effect of the drug.
Acute begins in ½ an hour usually —
from 1-3 hrs.

1st or [illegible] then we have [illegible] [illegible], [illegible] and [illegible] — are green & [illegible] [illegible] except the old. [illegible] a [illegible] [illegible] dilated and [illegible] [illegible]. [illegible] [illegible] [illegible], [illegible] [illegible] are [illegible] pulse [illegible] and irregular (in [illegible] the pulse is [illegible] apt to be irregular) force of heart is increased. [illegible], A [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible]. [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] be not [illegible] [illegible] 1/16 gr [illegible] [illegible] [illegible].

[illegible], [illegible], [illegible]. and give [illegible]. [illegible] is not of [illegible] [illegible] for it is not.

[illegible] of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] a [illegible]. [illegible]

Toxicology June 3 1882...

Prussic acid This is classed among the neurosthenics

Very active, and fatal

Ordinary prep is a 2% sol

Chiefly suicidal and accidental

Death comes almost before it leaves the lips. KCy is much used for the arts and gives many cases, esp in the silver shops. Causes no change in the tissues. It is made from bitter almonds 25 or parts of almonds = 6 parts of anhydrous. KCN

Bitter almond H2O = 1/10 - 1 % of the acid

Cherry Laurel water has about the same. All parts of cherry laurel are poison. Leaves of peach sweet almonds. Also wild cherry. mountain ash. apricot apple and pear seeds.

All alk salts of prussic acid are poison. Iron salt and sulpho cyanides are not poison unless combined with an acid.

HgCy very poisonous.

The bitter almond itself has given my cases of poison.

Large dose: 1-2 min symp commence. Falls at once. eye fixed prominent glistening, pupils dil and insen to light. Conv. Flexed jaw set. foaming at mouth. respiration and limbs convulsive. odor is usually perceptible. death very quick in a few min. usually person is not seen before death.

If a small dose.

Symp com. a few min. wt, pain and dizziness in head. Nausea at times. Loss of muscular power inside of two minutes. Frothing at mouth. eyes prom. fixed and prom. pupils dilated. Later tetanic spasms. Case of seven people time of death varied from 20 min to 45.

Small dose.

1st stage. dizzy. convulsive respir. contraction and chest

2. Loss of consciousness.

convulsions - labored dif and [illegible].
3 - Coma. relax of muscles. paralysis
The odor of prussic acid is important
and should always be sought after
Tobacco may disguise the smell. The
loss of [illegible] [illegible] is very important
usual [illegible] [illegible] of 2 min. [illegible]
one.
Opium alcohol. prussic acid may
all produce coma.
Prussic coma very quick opium never
made of 15 min. Alcohol [illegible] in
O may [illegible] up. P never. O pupils dil.
P. contracted. A = odor.
P = death [illegible] few min. O. 6 - 12.
A = recovery.
No chronic P poisoning. Externally
surface [illegible] [illegible] [illegible] - nails are
blue - fingers & toes clenched - [illegible]
eyes [illegible] - pupils dil.
On opening the body find intense
~~[illegible]~~ [illegible] - [illegible] [illegible]
Liquid blood is cherry red.
I & Note [illegible] - the liquid blood

is brown. The odor of the two is much alike. Smallest dose $\frac{9}{10}$ gr.
Odor is often absent. The limit betw the therapeutic dose and the fatal one is very narrow.
Fatal dose 1 gr. Oil of bitter almonds 17 m. 2½ gr of KCN is fatal.
Death is from a few mins to 1 hr.
Cold affusion stimulants stomach pump.
Dil sol of iron ferric and ferrous salts therefor. Prussian blue.
In doing the test for KCN the fluid should always be a little alk. for a free acid hinders the action then add a little HCl and you get.
The test guaiac Schonbein – 1/25,000 gr.
Sulphur – 1/3,000,000 ..
Silver .. 1/100,000 ..

Contents of stomach must be dis and fumes caught in sol of $AgNO_3$.
28 days is the longest time that prussic acid has been detected

P and Nitro benzol. diff.
Nitro benzol has a latent period which may last for several days due to delay in absorp. because it is slowly absorbed. If followed up with a dose of alcohol it be rapidly absorbed.
But still P is much more rapid.
Both produce the same symp. in character but not in rapidity with respect of blood. and odor of nitro benzole like bitter almonds.
Tobacco ~~and~~ poisoning in a mild form this is not uncommon = nausea vomiting.
Nicotine and Cocoa produce diff. Symp. Nicotine produces immediate con. convulsions and death and it is so rapidly absorbed that it does not reach the stomach. it is strong alk and corrodes the tissues and can often be detected in them. the ~~??~~ sub is very ???.

For Sources of seven cases are usually accidental, due to rapid absorp of the alk through the skin
Wrapping of tobacco around the spine has caused fatal cases. Symptoms 5-6 min dizz, sickly pain in stomach, vomiting, partial convulsions, stertorous respiration, death in from 10-15 min, rarely paralysis
Same symp are produced by absorp through skin, diff prep of tobacco have from 2-8% of alk
12 gr of leaves has produced fatal
1 gr of alk is fatal.
Emetics stomach pump.
Stimulants artificial resp. is good.
Odor is noticeable after death and there is the pupil ... Mayer reag ... ppt it
Hemlock poison is usually accidental. The fresh plant closely resembles ... ...

The prep of these vary in strength
[illegible] [illegible] than [illegible] dizzy, [illegible]
the heart and [illegible] muscles are
affected. and artificial resp is most
beneficial. other muscles are affected
patient walks as though drunk -
eyelids tend to close, convulsions
may occur at times, cause death in
from 1 - 3 hrs, artificial respiration
and stimulants, [illegible] of the
body and [illegible] of [illegible]
[illegible]

Extending into the surrounding tissue of pericardium — forms an abscess which forms at some point of lymph it may become organized ~~...~~ absorbed. Here also we keep up our plan of extension.

If sinuses open which discharge purulent material we feel have to do with a case of caries and — such a case only ~~one~~ may get an arrest of disease and a new growth of bone — short long anchylosis — or we may get a destruction of head of bone and perforation of acetabulum which may cause dangerous pelvic disease. In such a case the treatment recommended by Sayre — Excision. Which should be done as soon as the ~~disease~~ caries has been diagnosticated and if performed early he thinks that it gives the best chance of success.

he one. They which.. done more.
than anything and with great success
- but joint disease - & fever recovery
to relieve suffering and remove
irritation - extension. The convex
depression the inflamed surfaces and
also gives location to the joint.
Dr Bradford gives. three uses.
to which it - put - 1st as a means
of overcoming the muscles. which
are - spasmodically contracted
about the diseased joint. 2d as a
means of location of the joint
3d. To relieve the pain forming
the joint. That extension when
pain - many cases - undoubtedly
but that it fails - many more.
- equally true. Which fact -
explained. it think by Dr Bradford
when he says that we get the
relief from pain - - the cases.
where - we have inflamed tissues.
& deal with and we do not
get it - - those cases where the pain

comes from an inflamed and distended capsule. A very common method of extension is that known as the weight and pulley method and it is not only well known but quite popular. Indeed in many cases it has been given [illegible] credit. Dr. Bradford says in regard to this means of extension that if one visit the wards of a hospital at midnight he will find the patients lying in all sorts of positions with [illegible] on their faces and their legs lying flexed in such a manner that the extension is removed from the hip to the ~~knee. It however the great agent when applied with some~~ It has when applied in this manner one virtue. it confines the patient to the bed and in those cases where the

fixed - so severe as to prevent all movements. it serves its purpose quite well -, Yet taken as a whole. while without any regulating after others - is as a means of extension imperfect since. ~~you may~~ it is incapable of preserving the parallelism of the limbs. and your patient may recover with a deformity which is as bad as an amputation. But combined with thorough means of fixation it is a most excellent agent.

What has been said of this is also true of the physiological method of Hutchinson.

~~Ther~~ The which the extension is furnished by the wt of the leg the patient being put on crutches and a high shoe. Here in young children we have a chance of all sorts of accidents which may rekindle the old or keep up the present inflammation -

They will often step - the foot farther - the influence be of a suc[illegible] accurate form and ~~so~~ the act does not produce much pain - they will flex the knee and hold the affected limb. When lying in the [illegible] - the diseased joint they may ~~[illegible]~~ the affection to patients who have arrived at the years of discretion - walking but the limb other causing motion of the joint - ~~[illegible]~~ that they are liable to all sorts of accidents and when setting the extension is to a great extent removed and you get almost every act a slight movement of the joint

Thomas of Liverpool mentions a splint which gives the perfect fixation and at the same time permits of locomotion

It consists of an L shaped splint. the iron pieces being so

bent on to enclose the chest and on it - usually made there are two cross pieces - the upper coming just below the angles of scapulae and the lower - just above crest of ilium - these are covered - with a strong covering which extends from one to the other - and - either laced around the chest or - pinned while the long arm - fastened to the curve of the leg to which it - firmly bandaged

Taylor's long extension splint - much used and - of great service particularly as a means of extension and protecting the joint from concussion and keeping the inflamed surfaces apart. It is also to a great extent a very good means of fixation of the joint but - the fixation it holds only a 2 day position. It does not prevent turning - slip or the rotation of the limb and it also [illegible] the inconvenience of being put on with

a plaster and - some about hours
But it does preserve the
position of the limbs - and
although it does permit of very
slight motion - the joint being
not constantly - extending the
limb - it tends to keep the
inflamed surface apart and
according to some writers
~~not such~~) motion under these
circumstances is not particularly
injurious. After all the painful
cases - absolute fixation - of bone
and cast either - wire breeches
or a splint similar to the
one invented by Dr Watson of
this city - a treatment we
are forced to adopt and - one
which - sanctioned by good
authorities Under this treatment
pain will diminish - and the
child often gains in flesh
and strength but we should
always - get them out into the

as a sum a formula.

In all the treatment of all cancers we have to exercise much judgment and no definite rule can be laid down for the treatment of the disease. This it must be determined by the experience and judgment of the surgeon. Dr Bradford sums the matter up as follows:

Lotio hydrargyri flava = 1 of Hg_2Cl_2 to 300 of Ca H O

" " nigra 1 of $HgCl$ " 60 " "

LEONARD WOOD'S NOTEBOOK AT HARVARD MEDICAL SCHOOL

224. **(MEDICINE) WOOD, LEONARD.** Manuscript Notebook, containing Notes of Lectures at the Harvard Medical School, where he was a student, covering the period from December, 1881 to June, 1882. Sm 4to, half lea bound notebook, covers rubbed, 200 pages of Manuscript.

Leonard Wood was one of the most prominent doctors in American History: as an Army Surgeon, he won the Congressional Medal in the Apache Campaigns; a close friend of Theodore Roosevelt, he was Colonel of the Rough Riders in Cuba and later became military governor of Cuba; a Major General in the Army, he was Chief of Staff in 1910; beaten by Harding in the contest for the presidential nomination in 1920, Wood ended his career as Governor General of the Philippines.

135
135